

Revised Ordinance Governing  
**BACHELOR OF DENTAL SURGERY (BDS)**  
Degree Course 2011



**RAJIV GANDHI UNIVERSITY OF  
HEALTH SCIENCES KARNATAKA**

4th 'T' Block, Jayanagar, Bangalore 560041

Revised Ordinance Governing  
**Bachelor of Dental Surgery (BDS)**  
Degree Course 2011

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Website: [www.rguhs.ac.in](http://www.rguhs.ac.in)

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### **I BDS**

- I. General Human Anatomy including Embryology and Histology.
- ii. General Human Physiology , Biochemistry, Nutrition and Deities.
- iii. Dental Anatomy, Embryology and Oral Histology.
- iv. Dental Materials.
- v. Preclinical Prosthodontics and Crown & Bridae.

### **II BDS**

- I. General Pathology and Microbiology.
- ii. General and Dental Pharmacology and Therapeutics.
- iii. Dental Materials.
- iv. Preclinical Conservative Dentistry.
- v. Preclinical Prosthodontics and Crown & Bridge.
- vi. Oral Pathology & Oral Microbiology.

### **III BDS**

- I. General Medicine.
- ii. General Surgery.
- iii. Oral Pathology and Oral Microbiology.
- iv. Conservative Dentistry & Endodontics.
- v. Oral & Maxillofacial Surgery.
- vi. Oral Medicine and Radiology
- vii. Orthodontics & Dentofacial Orthopaedics.
- viii. Paediatric & Preventive Dentistry.
- ix. Periodontology.
- x. Prosthodontics and Crown & Bridge.
- xi. Public Health Dentistry.

### **IV BDS**

- I. Orthodontics & Dentofacial Orthopaedics.
- ii. Oral Medicine and Radiology.
- iii. Paediatric & Preventive Dentistry.
- iv. Periodontology.
- v. Oral & Maxillofacial Surgery.
- vi. Prosthodontics and Crown and Bridge.
- vii. Conservative Dentistry & Endodontics.
- viii. Public Health Dentistry.

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ರಾಜೀವ್ ಗಾಂಧಿ ಆರೋಗ್ಯ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಕರ್ನಾಟಕ

4ನೇ ಟಿ ಬ್ಲಾಕ್, ಜಯನಗರ, ಬೆಂಗಳೂರು - 560 041.

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AUTH/BDS-Regulation/172/2011-12

27/01/2012

Ref. : .....

**NOTIFICATION**

Date : .....

- Sub: Implementation of DCI Revised BDS Regulations 2011 – Reg.  
Ref:1) RGUHS Notification No.AUTH/Revised BDS Regulation-317/2008-09, dated:04/08/2008  
2) DCI Notification in Gazette of India extraordinary No.DE-130-2011, dated:25/08/2011.  
3) DCI letter No.DE-130-2011/B.2211, dated:26/08/2011.  
4) Letter of Dean, Faculty of Dentistry, RGUHS, Bangalore No.DAPM RVDC/928/2011-12, dated: 27/01/2012.  
5) Orders of Hon'ble Vice-Chancellor dated:28/01/2011.

In exercise of the powers conferred under Section 13(2) of RGUHS Act, 1994, Hon'ble Vice-Chancellor is pleased to order the "Implementation of DCI Revised BDS Course (3<sup>rd</sup> Amendment) Regulations, 2011" applicable to the students admitted from the year 2008-09. The students appearing the for IV BDS examination are required to appear for examination in the following subjects.

1. Oral Medicine & Radiology
2. Oral & Maxillofacial Surgery
3. Periodontics
4. Prosthodontics Crown & Bridge
5. Conservative Dentistry & Endodontics
6. Community Dentistry
7. Orthodontics
8. Pedodontics

The above Ordinance shall come into force with immediate effect.

By Order,

  
**REGISTRAR**

**To**

Principals of all Dental Colleges affiliated to RGUHS.

**Copy to:**

1. The Secretary to Governor, Governor's Secretariat, Raj Bhavan, Bangalore – 560 001.
2. Principal Secretary to Government, Health & Family Welfare Department, (Medical Education), Vikasa Soudha, Bangalore –560 001.
3. The Director, Department of Medical Education, Anand Rao Circle, Bangalore – 560 009.
4. Secretary, DCI, Aiwan-E-Galib Marg, Kotla Road, New Delhi - 110002
5. Dean, Faculty of Dentistry, RGUHS, Bangalore
6. Director, Curriculum Development Cell, RGUHS, Bangalore
7. PA to Vice-Chancellor / Registrar / Registrar (Eva.) / Finance Officer.
8. The Home Page of RGUHS Website–  
<http://www.rguhs.ac.in/Authoritysection/Fellowship.html>.
9. Office Copy/Guard File.

# SECTION I

## GOALS OF EDUCATION AND TRAINING IN DENTAL SCIENCE OF RGUHS

The Dental curriculum shall be oriented towards educating students of B.D.S. Course to:

1. Take up the responsibilities of dental surgeon of first contact and be capable of functioning independently in both urban and rural environment.
2. Provide educational experience that allows hands-on-experience both in hospital as well as in community setting.
3. Make maximum efforts to encourage integrated teaching and de-emphasize compartmentalisation of disciplines so as to achieve horizontal and vertical integration in different phases.
4. Offer educational experience that emphasizes health rather than only disease.
5. Teach common problems of health and disease and to the national programmes.
6. Use learner oriented methods, which would encourage clarity of expression, independence of judgement, scientific habits, problem solving abilities, self initiated and self-directed learning.
7. Use of active methods of learning such as group discussions, seminars, role play, field visits, demonstrations, peer interactions etc., which would enable students to develop personality, communication skills and other qualities which are necessary may be done.

Regular periodic assessment be done throughout the course. Examinations be designed with a view to assess not merely the knowledge but also practical and clinical skills, habits and values which are necessary for a graduate to carry out professional day to day work competently.

### **Towards achieving these goals every Dental College should:**

- Evolve institutional objectives, which would be in consonance with the national goals and health policy. The institutional objectives should describe the attributes of their product.
- Shift the role of Dental teachers from merely imparting knowledge to that of a facilitator and motivator of student learning.
- Establish a Dental Education Unit for faculty development, preparation of learning resource materials and for improving evaluation methods.

# SECTION II

## AIMS AND OBJECTIVE OF BDS COURSE

### Aims

The dental graduates during training in the institutions should acquire adequate knowledge, necessary skills and such attitudes which are required for carrying out all the activities appropriate to general dental practice involving the prevention, diagnosis and treatment of anomalies and diseases of the teeth, mouth, jaws and associated tissues. The graduate should also understand the concept of community oral health education and be able to participate in the rural health care delivery programmes existing in the country.

### Objectives

The objectives are dealt under three headings namely (a) knowledge and understanding (b) skills and (c) attitudes.

#### a. Knowledge and understanding

The graduate should acquire the following during the period of training.

1. Adequate knowledge of the scientific foundations on which dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and should be able to evaluate and analyse scientifically various established facts and data.
2. Adequate knowledge of the development, structure and function of the teeth, mouth and jaws and associated tissues both in health and disease and their relationship and effect on general-state of health and also the bearing on physical and social well-being of the patient.
3. Adequate knowledge of clinical disciplines and methods, which provide a coherent picture of anomalies, lesions and diseases of the teeth, mouth and jaws and preventive, diagnostic and therapeutic aspects of dentistry.
4. Adequate clinical experience required for general dental practice.
5. Adequate knowledge of biological function and behaviour of persons in health and sickness as well as the influence of the natural and social environment on the state of health so far as it affects dentistry.

**b. Skills**

A graduate should be able to demonstrate the following skills necessary for practice of dentistry.

1. Able to diagnose and manage various common dental problems encountered in general dental practice, keeping in mind the expectations and the right of the society to receive the best possible treatment available wherever possible.
2. Acquire skill to prevent and manage complications if encountered while carrying out various dental surgical and other procedures.
3. Possess skill to carry out required investigative procedures and ability to interpret laboratory findings.
4. Promote oral health and help to prevent oral diseases wherever possible.
5. Competent in control of pain and anxiety during dental treatment.

**c. Attitudes**

A graduate should develop during the training period the following attitudes.

1. Willing to apply current knowledge of dentistry in the best interest of the patients and the community.
2. Maintain a high standard of professional ethics and conduct and apply these in all aspects of professional life.
3. Seek to improve awareness and provide possible solutions for oral health problems and needs throughout the community.
4. Willingness to participate in the continuing education programmes to update knowledge and professional skills from time to time.
5. To help and to participate in the implementation of national health programmes.

# SECTION III

## REGULATION RELATING TO BDS COURSE

### I. ELIGIBILITY:

#### 1.1 Qualifying Examination:

A candidate seeking admission to first BDS course:

- a. Shall have passed the two years Pre-University Examination of Pre-University Board of Karnataka with English and Physics Chemistry and Biology as optional subjects. The candidate shall have passed subjects of English, Physics, Chemistry and Biology individually\* also  
OR
- b. Shall have passed any other examination conducted by Boards/Councils/Intermediate Education established by State Governments/ Central Government and recognised as equivalent to two year Pre University examination by the Rajiv Gandhi University of Health Sciences/Association of Indian Universities (AIU), with English as one of the subjects and Physics, Chemistry and Biology as optional subjects and the candidate shall have passed subjects of English, Physics, Chemistry and Biology individually.  
OR
- c. Shall have passed Intermediate examination in Science of an Indian University/Board/Council or other recognised examining bodies with Physics, Chemistry and Biology, which shall include a practical test in these subjects and also English as compulsory subject. The candidate shall have passed subjects of English, Physics, Chemistry and Biology individually.  
OR
- d. Shall have passed pre- professional/ pre- medical examination with Physics, Chemistry and Biology, after passing either the higher secondary school examination. The pre-professional/ pre-medical examination, shall include a practical test in Physics, Chemistry and Biology and also English as compulsory subject.  
OR
- e. Shall have passed first year of the three year degree course of a recognised University with Physics, Chemistry and Biology including a practical test in these subjects provided the Examination is an 'University Examination' provided that the candidate shall have passed subjects of English, Physics, Chemistry and Biology individually in the pre university or other examinations mentioned in the clauses above.  
OR
- f. Shall have passed B.Sc. Examination of an Indian University, provided that he/she has passed the B.Sc. examination with not less than two of the following subjects: Physics, Chemistry, Biology (Botany, Zoology) provided the candidate has passed subjects of English, Physics, Chemistry and Biology individually in the qualifying examinations mentioned in clauses (a), (b) and ©.

### **1.2 Qualifying Marks:**

The selection of students to dental colleges shall be based on merit provided that:

- a. In case of admission on the basis of qualifying examination, a candidate for admission to BDS course must have passed individually in the subjects of Physics, Chemistry, Biology and English and must have obtained a minimum of 50% marks taken together in Physics, Chemistry and Biology in the qualifying examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward Classes, the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination be 40% instead of 50% as above and must have passing marks in English.
- b. In case of admission on the basis of competitive entrance examination, a candidate must have passed individually in the subjects of Physics, Chemistry, Biology and English and must have obtained a minimum of 50% marks in Physics, Chemistry and Biology taken together at the qualifying examination and in addition must have come in the merit list prepared as a result of such competitive entrance examination by securing not less than 50% marks in Physics, Chemistry and Biology taken together in the competitive examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward Classes notified by the Government, the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination and competitive entrance examination be 40% instead of 50% as stated above. (Vide Amendment to DCI Regulations, 2007, notified in Gazette of Government of India dated 10.09.2007).

### **II. Age Requirement:**

The candidate shall have completed the age of 17 years at the time of admission or will complete this age on 31st December of the year in which he/she seeks admission.

### **III. Duration of the Course:**

Four academic years with 240 teaching days in each academic year, and One year of internship.

### **IV. Attendance requirement, Progress and Conduct:**

Attendance requirement shall be as follows:

- a. 75% in Theory and 75% in Practical/Clinicals in each subject in each year.
- b. In case of subject in which the instructional programme extends through more than one academic year and hence there is no University Examination in the subject (i.e. non- exam going subjects), the attendance requirement shall not be less than 70% in Theory and Practical/ Clinical. However, at the time of appearing for the professional examination in the subject the candidate should satisfy the condition (a) above.

## **V. Titles of subjects of study**

### First Year

- I. General Human Anatomy including Embryology and Histology.
- ii. General Human Physiology and Biochemistry, Nutrition and Dietics.
- iii. Dental Anatomy, Embryology and Oral Histology.
- iv. Dental Materials.
- v. Preclinical Prosthodontics and Crown & Bridge.

### Second Year

- I. General Pathology and Microbiology.
- ii. General and Dental Pharmacology and Therapeutics.
- iii. Dental Materials.
- iv. Preclinical Conservative Dentistry.
- v. Preclinical Prosthodontics and Crown & Bridge.
- vi. Oral Pathology & Oral Microbiology.

### Third Year

- I. General Medicine.
- ii. General Surgery.
- iii. Oral Pathology and Oral Microbiology.
- iv. Conservative Dentistry & Endodontics.
- v. Oral & Maxillofacial Surgery.
- vi. Oral Medicine and Radiology
- vii. Orthodontics & Dentofacial Orthopaedics.
- viii. Paediatric & Preventive Dentistry.
- ix. Periodontology.
- x. Prosthodontics and Crown & Bridge.
- xi. Public Health Dentistry.

### Final Year

- I. Orthodontics & Dentofacial Orthopaedics.
- ii. Oral Medicine and Radiology.
- iii. Paediatric & Preventive Dentistry.
- iv. Periodontology.
- v. Oral & Maxillofacial Surgery.
- vi. Prosthodontics and Crown and Bridge.
- vii. Conservative Dentistry & Endodontics.
- viii. Public Health Dentistry.

## VI. Teaching Hours

Teaching hours for each subject from first to final year - Theory and Practical are shown in the Tables-I to V

TABLE - I Subjects and Hours of Instruction (B.D.S Course)

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General Human Anatomy including Embryology, Osteology and Histology	100	175	--	275
2.	General Human Physiology, Biochemistry, Nutrition and Dietics	120 70	60 60	--	180 130
3.	Dental Materials	80	240	--	320
4.	Dental Anatomy, Embryology, and Oral Histology	105	250	--	355
5.	Dental Pharmacology and Therapeutics	70	20	--	90
6.	General Pathology & Microbiology	55 65	55 50	--	110 115
7.	General Medicine	60	--	90	150
8.	General Surgery	60	--	90	150
9.	Oral Pathology and Microbiology	145	130	--	275
10.	Oral Medicine and Radiology	65	--	170	235
11.	Paediatric & Preventive Dentistry	65	--	170	235
12.	Orthodontics & Dental Orthopaedics	50	--	170	220
13.	Periodontology	80	--	170	250
14.	Oral & Maxillofacial Surgery	70	--	270	340
15.	Conservative Dentistry and Endodontics	135	200	370	705
16.	Prosthodontics & Crown & Bridge	135	300	370	805
17.	Public Health Dentistry	60	--	200	260
	Total	1590	1540	2130	5200

Note: There should be a minimum of 240 teaching days every academic year consisting of 8 working hours including one hour of lunch break.  
Internship-240x8 hours=1920 clinical hours.

**TABLE - II Subjects and Hours of Instruction for  
First year B.D.S**

<b>Sl. No.</b>	<b>Subject</b>	<b>Lecture Hours</b>	<b>Practical Hours</b>	<b>Clinical Hours</b>	<b>Total Hours</b>
1.	General Human Anatomy including Embryology, Osteology and Histology	100	175	--	275
2.	General Human Physiology,	120	60	--	180
3.	Biochemistry, Nutrition and Dietics	70	60	--	130
4.	Dental Anatomy, Embryology, and Oral Histology	105	250	--	355
5.	Dental Materials	20	40	--	60
6.	Preclinical Prosthodontics and Crown & Bridge	--	100	--	100
	<b>Total</b>	<b>415</b>	<b>685</b>	<b>--</b>	<b>1100</b>

**TABLE - III Subjects and Hours of Instruction for  
Second year B.D.S**

<b>Sl. No.</b>	<b>Subject</b>	<b>Lecture Hours</b>	<b>Practical Hours</b>	<b>Clinical Hours</b>	<b>Total Hours</b>
1.	General and Dental Pharmacology and Therapeutics	70	20	--	90
2.	General Pathology	55	55		110
3.	Microbiology	65	50	--	115
4.	Dental Materials	60	200	--	260
5.	Oral Pathology and Oral Microbiology	25	50	--	75
6.	Preclinical Prosthodontics and Crown & Bridge	25	200		225
7.	Preclinical conservative Dentistry	25	200	--	225
	<b>Total</b>	<b>325</b>	<b>775</b>	<b>--</b>	<b>1100</b>

**TABLE - IV Subjects and Hours of Instruction for Third year B.D.S**

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	General Medicine.	60	--	90	150
2.	General Surgery.	60	--	90	150
3.	Oral Pathology and Oral Microbiology.	120	80	--	200
4.	Conservative Dentistry & Endodontics.	30	--	70	100
5.	Oral & Maxillofacial Surgery.	20	--	70	90
6.	Oral Medicine and Radiology	20	--	70	90
7.	Orthodontics & Dentofacial Orthopaedics.	20	--	70	90
8.	Paediatric & Preventive Dentistry.	20	--	70	90
9.	Periodontology.	30	--	70	100
10.	Prosthodontics and Crown & Bridge.	30	--	70	100
	<b>Total</b>	<b>410</b>	<b>80</b>	<b>670</b>	<b>1160</b>

**TABLE - V Subjects and Hours of Instruction for Fourth year B.D.S**

Sl. No.	Subject	Lecture Hours	Practical Hours	Clinical Hours	Total Hours
1.	Orthodontics & Dentofacial Orthopaedics.	30	--	100	130
2.	Oral Medicine and Radiology.	45	--	100	145
3.	Paediatric & Preventive Dentistry.	45	--	100	145
4.	Periodontology.	50	--	100	150
5.	Oral & Maxillofacial Surgery.	50	--	200	250
6.	Prosthodontics and Crown and Bridge.	80	--	300	380
7.	Conservative Dentistry & Endodontics.	80	--	300	380
8.	Public Health Dentistry.	60	--	200	260
	<b>Total</b>	<b>440</b>	<b>--</b>	<b>1400</b>	<b>1840</b>

## **VII. Schedule of Examinations**

The University shall conduct two examinations annually at an interval of not less than four to six months as notified by the University from time to time.

A candidate who satisfies the requirement of attendance, progress, and conduct as stipulated by the university shall be eligible to appear in the University examination. Certificate to the above effect should be produced from the Head of the Institution along with the application for examination and the prescribed fee.

## **VIII. Scheme of Examination**

The scheme of examination of B.D.S. course shall be divided into 4 professional examinations, viz., I.B.D.S. Examination at the end of first academic year, II B.D.S. at the end of second academic year, III B.D.S. at the end of third academic year and Final year B.D.S. examination at the end of fourth academic year.

### **VIII. i. Internal Assessment**

The internal assessment need not be limited to written tests. It should relate to other items such as maintenance of records, participation in seminars and group discussions, clinical case study, proficiency in carrying out practical or clinical skill or participation in projects and assignments (even) during vacation. These be evaluated objectively and recorded. The weightage given to internal assessment is 10% out of total marks assigned for a subject separately for theory and practical/clinical examinations.

A minimum of three internal assessments to be held in an academic year and the average of these tests shall be sent to the university.

### **VIII. ii. University Examination:**

There shall be two examinations annually conducted at an interval of not less than four to six months. The written examination in each subject shall consist of one paper of three hours duration and shall have maximum of 70 marks.

## **X. Type of questions and distribution of marks:**

Each question paper shall be of 3 hours duration, carrying maximum marks of 70. There shall be three types of questions with distribution of marks as shown in Table VII:

**Table - VII**

<b>Type of Questions</b>	<b>No. of Questions</b>	<b>Marks of Questions</b>	<b>Total Marks</b>
Long Essay Type	2	10	20
Short Essay Type	8	5	40
Short Answer Type	5	2	10
<b>GRAND TOTAL</b>			<b>70</b>

Note: In case of Physiology & Biochemistry and Pathology & Microbiology  
The distribution of marks and types of questions will be as follows:

1. In the subject of General Human Physiology and Biochemistry, Section 'A' (Gen. Physiology) shall contain one Long essay type question carrying 10 marks and second question containing three short Essay type questions carrying five marks each, third question containing five Short Answer questions carrying two marks each. Section 'B' (Biochemistry) shall contain one Long essay type question of 10 marks and second question containing three short Essay type questions of five marks each, third question containing five Short Answer type questions carrying two marks each. As shown in Table-VIII.
2. In the subject of Gen. Pathology, Section 'A' (Gen. Pathology) shall contain one Long essay type question carrying 10 marks and second question shall contain three Short Essay type question carrying five marks each, third question containing five Short Answer questions of two marks each. Section 'B' (Microbiology) shall contain one Long essay type question carrying 10 marks and second question shall contain three Short essay type questions carrying five marks each, third question containing five short answer questions of two marks each. As shown in Table-IX.

**Table - VIII**

	<b>Type of Questions</b>	<b>No. of Questions</b>	<b>Marks of Questions</b>	<b>Total Marks</b>
Physiology	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	<b>GRAND TOTAL</b>			<b>35</b>

	<b>Type of Questions</b>	<b>No. of Questions</b>	<b>Marks of Questions</b>	<b>Total Marks</b>
Biochemistry Nutrition and Dietics	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	<b>GRAND TOTAL</b>			<b>35</b>

**TABLE - IX**

	Type of Questions	No. of Questions	Marks of Questions	Total Marks
Pathology	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	<b>GRAND TOTAL</b>			<b>35</b>

	Type of Questions	No. of Questions	Marks of Questions	Total Marks
Microbiology	Long Essay Type	01	10	10
	Short Essay Type	03	05	15
	Short Answer Type	05	02	10
	<b>GRAND TOTAL</b>			<b>35</b>

XI. Distribution of Marks in University Examination and Internal Assessment for various subjects from First year to Fifth year is shown in Table X:

**TABLE-X**  
**Distribution of Marks in University Examination and Internal Assessment**  
**for various subjects from First year to Fifth year :**

Subjects	THEORY				PRACTICALS / CLINICALS			Grand Total
	Univer sity Paper	Viva voce	Internal Assess ment	Total	Univer sity exami nation	Internal Assess ment	Total	
<b>I BDS</b> 1. General Anatomy including Embryology and Histology	70	20	10	100	90	10	100	200
2 . Section- A General Human Physiology And Section- B Biochemistry Nutrition and Dietics	35	10	05	50	45	05	50	200
	35	10	05	50	45	05	50	
3. Dental Anatomy, Embryology and Oral Histology.	70	20	10	100	90	10	100	200

<b>II BDS</b> Section - A 1. General Pathology Section - B & Microbiology	35	10	05	50	45	05	50	200
	35	10	05	50	45	05	50	
2. General and Dental Pharmacology and Therapeutics	70	20	10	100	90	10	100	200
3. Dental Materials	70	20	10	100	90	10	100	200
4. *Pre-clinical Conservative Dentistry	--	20		20	60	20	80	100
5. *Pre-clinical Prosthodontics * No theory paper, Practical/Viva voce only.	--	20		20	60	20	80	100
<b>III BDS</b> 1. General Medicine	70	20	10	100	90	10	100	200
2. General Surgery	70	20	10	100	90	10	100	200
3. Oral Pathology and Oral Microbiology	70	20	10	100	90	10	100	200
<b>IV BDS</b> 1. Oral Medicine and Radiology	70	20	10	100	90	10	100	200
2. Paediatric & preventive dentistry	70	20	10	100	90	10	100	200
3. Orthodontics & Dento-facial orthopaedics	70	20	10	100	90	10	100	200
4. Periodontology	70	20	10	100	90	10	100	200
5. Prosthodontics and Crown and Bridge	70	20	10	100	90	10	100	200
6. Conservative Dentistry and Endodontics	70	20	10	100	90	10	100	200
7. Oral and maxillofacial Surgery.	70	20	10	100	90	10	100	200
8. Public Health Dentistry	70	20	10	100	90	10	100	200

## **XII. Eligibility to appear in University examination:**

A candidate who has failed in any one subject only in either I year B.D.S or II year B.D.S or III year BDS university examination shall be permitted to study in the next class provided that in order to avail the carry over facility such a candidate should fulfill the following requirements:

- a. student shall have not less than 75% of attendance in Theory and Practical separately in all the examination subjects prescribed for that year.
- b. should have appeared in all the examination subjects prescribed for that year in the University examination simultaneously.

A Candidate has to pass the carry over subject before being eligible to appear for higher B.D.S Examination.

## **XIII. Criteria for Pass in the University Examination:**

1. For declaration of pass in a subject, a candidate shall secure 50% marks in the University examination both in Theory and Practical/Clinical examinations separately, as stipulated below :
  - a. For pass in Theory, a candidate shall secure 50% marks in aggregate in University theory examination i.e. marks obtained in University written examination, viva voce examination and internal assessment (theory) combined together i.e. fifty out of One hundred marks.
  - b. In the University Practical/clinical examination, a candidate shall secure 50% marks in aggregate i.e. Practical /Clinical and Internal Assessment combined together i.e. 50/100 marks.
  - c. In case of pre-clinical Prosthetic Dentistry and Pre-clinical Conservative Dentistry in II BDS, where there is no written examination, minimum for pass is 50% of marks in Practical and Viva voce combined together in University Examination including Internal Assessment i.e. 50/100 marks.
  - d. Successful candidates who obtain 65% of the total marks or more shall be declared to have passed the examination in First Class. Other successful candidates will be placed in Second Class. A candidate who obtains 75% and above is eligible for Distinction. Only those candidates who pass the whole examination in the first attempt will be eligible for distinction or class.

## **XIV. Field Programme in Community Dentistry:**

As a part of community dentistry program, students in the Clinical years will have to attend the various dental camps/ field programmes as part fulfillment of requirements of BDS examination to the satisfaction of the head of the Institution.

## **XV. Miscellaneous:**

### **A. Migration/ Transfer of Students**

- a. A student studying in a recognized Dental College may be allowed to migrate/ transfer to another recognized Dental College under another/same University provided the candidate has passed I B.D.S. examination.
- b. The migration / transfer can be allowed by the University concerned within one month after the announcement of results of I B.D.S. examination. However, migration or transfer should be avoided in the middle of any year, and in no case before the completion of I BDS examination.
- c. The number of students migrating/ transferring from one Dental College to another Dental College during one year will be kept to the minimum but should not exceed the limit of 5% of its intake subject to a maximum of five students in any one Dental College in one year.
- d. Cases not covered under the above regulations may be referred to the Dental Council of India for consideration on individual merits.
- e. Intimation about the admissions of migrated transferred students into any dental college should be sent to the Dental Council of India immediately.

Note: In cases where a candidate who seeks admission to this university has already completed subject(s), exemption in the subject(s) will be given after admitting the student to the particular year.

### **B. Re-admission of candidates who discontinued the course:**

A candidate who discontinues the course is eligible for re-admission subject to the following conditions:

1. Provision for re-admission is only once during the entire course.
2. He/she should seek readmission within three years from the date of discontinuation of the course.
3. He/she should pay the prescribed fees for the year for which he/she seeks admission and cannot claim readmission on the strength of fees paid earlier.
4. If the candidate discontinues after University Examination, he/she should reappear for the subjects in which he/she failed before seeking admission to the next higher class by paying examination fee etc.
5. He/she should put in two terms of attendance in the class for which he/she seeks readmission before appearing for the University Examination.

# SECTION IV

## B.D.S COURSE SYLLABUS

### I BDS HUMAN ANATOMY INCLUDING EMBRYOLOGY, OSTEOLOGY & HISTOLOGY

**Theory** -100 Hrs.

I. Introduction: 10 hrs.

Scope, subdivisions, definitions and interpretation of anatomical terms, planes, anatomical positions, elements of anatomy including fascia muscles, blood vessels, nerves, joints and lymph vessels.

II. Osteology of Head & Neck: 20 hrs.

Skull - exterior - Norma and vault : Interior - Cranial fossae. Individual bones - mandible, maxilla, frontal, parietal, occipital, temporal, zygomatic, ethmoid, sphenoid, vomer, palatine, nasal bones.

Cervical vertebrae in general; C 1, C 2 & C 7 in particular Hyoid bone.

III. Gross Anatomy of Head and Neck: 30 hrs.

- a. Scalp - layers, blood supply, nerve supply, lymphatic drainage.
- b. Face - Muscles, blood supply, nerve supply, lymphatic drainage, lacrimal apparatus.
- c. Neck -
  - i. Cervical fascia
  - ii. Posterior triangle
  - iii. Anterior triangle - submental, digastric, carotid & muscular
  - iv. Midline structures of neck
  
- d. Cranial cavity - meninges; dural folds and sinuses; Hypophysis cerebri.
- e. Orbit - nerves, vessels, extrinsic muscles of eyeball.
- f. Parotid region - parotid gland.
- g. Temporal and infra-temporal fossae - muscles of mastication, Maxillary artery, maxillary nerve and mandibular nerve.
- h. Temporo-mandibular joint.
- i. Submandibular region - submandibular salivary gland.
- j. Thyroid and parathyroid glands.
- k. Vessels of head & neck - Carotid, subclavian arteries, Internal jugular vein.
- l. Mouth, tongue and palate.
- m. Pharynx.

- n. Larynx.
- o. Cervical part of trachea and oesophagus.
- p. Nasal cavity and para nasal air sinuses.
- q. Lymphatic drainage of head & neck.
- r. Joints of neck - atlanto - occipital, atlanto-axial.

#### **IV. Neuroanatomy: 12 hrs.**

- a. Detailed description of cranial nerves - V, VII, IX, X (in the region of head and neck) XI, XII including their nuclei of origin, intra and extra cranial courses.
- b. Cervical spinal nerves and cervical plexus.
- c. Autonomic nervous system of head and neck.

#### **V. Embryology: 12 hrs.**

- a. Gametogenesis - spermatogenesis and oogenesis, fertilisation implantation, germ layer formation, fetal membranes and placenta.
- b. Development of branchial apparatus, pharyngeal arches, pouches and clefts.
- c. Development of face, jaws, oral cavity, tongue, palate, nasal cavity, paranasal air sinuses, salivary glands, thyroid gland, hypophysis cerebri, temporo-mandibular joint.

#### **VI. Histology: 16 hrs.**

- a. Introduction of cytology and histology.
- b. Basic tissues - epithelial - simple; compound
- c. Connective tissue - cells, fibres - collagen, elastic, reticular
- d. Cartilage - hyaline, elastic, white fibro cartilages,
- e. Spongy and compact bones - TS, LS
- f. Muscular tissue - skeletal, cardiac and smooth,
- g. Nervous tissue - peripheral nerve and ganglia.
- h. Blood vessels - artery & vein.
- i. Glands - serous, mucous, mixed salivary glands.
- j. Lymphoid tissue - lymph node, palatine tonsil, thymus & Spleen.
- k. Skin - hairy and non hairy
- l. Endocrine glands - pituitary, thyroid, parathyroid, suprarenal & pancreas.
- m. Lip, tongue & oesophagus
- n. Trachea and lung.

#### **PRACTICALS**

70 Classes of (2 1/2 hrs. each) (175 hrs )

- The following topics are included for examination - MUST KNOW.

### **Dissection Topics:**

1. Scalp
2. Face including deeper dissection
3. Posterior triangle of neck.
4. Anterior triangles of neck -
  - a. median region
  - b. digastric
  - c. Carotid triangles.
5. Deep dissection of neck -
  - a. Thyroid gland
  - b. Great vessels of neck.
6. Parotid region.
7. Infra temporal fossa -
  - a. Muscles of mastication
  - b. Mandibular nerve and its branches
  - c. Maxillary artery
  - d. Temporo mandibular joint
8. Sub mandibular region - gland, hyoglossus and its relations
9. Mouth, palate and pharynx.
10. Nasal cavity and paranasal air sinuses
11. Tongue
12. Larynx

### **Surface Anatomy: (to be included in practicals only)**

#### **MUST KNOW**

Superior sagittal sinus; middle meningeal artery; pterion; facial artery; parotid gland and duct; facial nerve on face; common, external, internal carotid arteries; palatine tonsil; vocal cords; thyroid gland, Ext. Jng vein.

### **Radiological Anatomy: (Practicals only)**

AP & Lateral views of head and neck. MUST KNOW Interpretation of normal radiological anatomy.

### **Histology Slides: - for Practical exam as Spotters & for Discussion.**

1. Epithelium - simple squamous (mesentry)
2. Epithelium - simple Cuboidal (thyroid)
3. Epithelium - simple Columnar (Gallbladder)
4. Epithelium - simple Ciliated columnar
5. Epithelium - Pseudo-stratified ciliated columnar (Trachea)
6. Epithelium - Compound stratified squamous kertilinised (skin)
7. Epithelium - stratified squamous non keralinised- do -non-keratinised (oesophagus)
8. Compound - transitional (urinary bladder)
9. Areolar tissue.

10. Collagen fibres.
11. Elastic fibres.
12. Tendon.
13. Cartilage - hyaline
  - Elastic
  - White fibrous.
14. Bone - T.S.
  - L.S.
15. Muscle - Skeletal (LS/TS)
  - cardiac
  - smooth.
16. Blood vessels - large sized artery
  - Medium sized artery
  - large vein
  - Medium vein
17. Peripheral nerve & ganglia
18. Serous salivary gland.
19. Mucous Salivary Gland.
20. Mixed Salivary Gland.
21. Lymph node.
22. Palatine tonsil.
23. Thymus
24. Spleen
25. Skin - hairy
26. Skin - non hairy
27. Lip
28. Tooth
29. Tongue
30. Trachea
31. Oesophagus
32. Lung
33. Thyroid & parathyroid
34. Pituitary
35. Suprarenal gland.
36. Pancreas.

**Desirable to Know (to be Demonstrated)**

1. Ear - external, middle & internal.
2. Spinal cord;
- 3 Brain Stem
4. Cerebellum
5. Cerebral hemispheres - important gyri & sulci of superolateral, medial and inferior surfaces; functional areas - sensory, motor, auditory, visual, gustatory speech & splanchnic areas; blood supply of brain;
6. Cranial nerves in general with functions other than V, VII, IX, XII.

7. Genetics - definitions, chromosomes, chromosomal aberrations;
8. Anthropology
9. Organs of thorax and abdomen.
10. Extremities - upper & lower limbs
11. Histology of
  - a. Stomach - fundus and pylorus;
  - b. Small intestine - duodenum, jejunum & ileum;
  - c. Large intestine - colon and appendix
  - d. Liver and gall bladder

### Scheme of Examination

#### A. Theory : 70 Marks

#### Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
<b>Gross Anatomy of Head and Neck</b> - Scalp, Face, Triangles of Neck, Dural folds and Venous sinuses, contents of the Orbit excluding Eyeball, Parotid Gland, Infratemporal fossa, Temporo mandibular joint, Submandibular region, Thyroid gland, Pharynx, Tongue, Nasal Cavity and paranasal air sinuses. Cranial nerves - V, VII, IX and XII Development of Branchial arches poranecial pouches apparatus, Face Systemic Embryology and Systemic Histology.	Long Essays 2 x 10 marks	20
<b>Gross Anatomy of Head and Neck</b> - Scalp, Face, Cervical fascia, Midline structures of the neck, Vertebral Joints of Neck, Contents of the Orbit excluding Eyeball, Vessels of Head and Neck, Infratemporal fossa, Mouth, Palate, Pharynx, Nasal Cavity, Cervical Part of Trachea and Oesophagus, Lymphatic drainage of Head and Neck  <b>Cranial nerves</b> - V, VII, IX, XI and XII and Cervical Plexus General and Systemic embryology and Histology, Osteology of Head and Neck	Short Essays 08 x 5 marks + Short Answers 05 x 2 marks	40  10
	Total	70

**B. Viva Voce** : **20 Marks**

- a. Osteology of Head and Neck - 05 marks
- b. Soft part from Head and Neck - 05 marks
- c. Embryology Models - 05 marks
- d. Radiological Anatomy - 05 marks

**C. Internal Assessment - Theory : 10 Marks, Practical: 10 Marks**

**D. Practicals** : **90 Marks**

**Gross Anatomy**

- a. Spotters carrying 2 marks each 02 x 10 = 20 marks
- b. Discussion on Two given dissected specimens 02 x 10 = 20 marks
- c. Surface Anatomy 10 x 1 = 10 marks

**Histology**

- a. Identification of 10 Slides of 02 mark each 02 x 10 = 20 marks
- b. Discussion on TWO given slides 10 x 2 = 20 marks  
(One General and one Systemic)

**Text Books Recommended :**

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Cunningham's Manual of practical Anatomy (Vol-I)	G.J. Romanes	15th	1998	ELBS Oxford	£ 3.95
Cunningham's manual of practical Anatomy (Vol-3)	G.J. Romanes	15th	1998	ELBS Oxford	£ 3.95
Essentials of Human Anatomy (Head & Neck)	A.K. Dutta	--	1999	Current Books International	Rs. 200/-
Human Embryology	Inderbir Singh	6th	1996	Mc Milan India Ltd. Delhi	Rs. 242/-
Langman's Medical Embryology	Langman	5th	Nov 1994	William & Wilkins Pub. Baltimore, USA	Rs. 899/-
Text Book of Human Histology	Inderbir Singh	3rd	1997	J.P Brothers Medical. Publishers Delhi	Rs. 200/-

### Reference Books

Gray's Anatomy	Peter L. Williams	39th	1995	ELBS	£ 40.00
Last's Anatomy Regional and Applied	Mc Minn RMH	10th	1999	Churchill Livingston, Edinburgh	£ 35.00
Grant's Method Anatomy	John V. Basmajian	11th (Ind)	1997	D.I. Publishers	Rs. 725/-
Lee. Mc Gregor's Synopsis of Surgical Anatomy	G.A.G. Decker	12th	--	K.M. Varghese Bombay	Rs. 350/-

### General Human Physiology

Theory : 120 Hrs

MUST KNOW		Hours
I.	<b>General Physiology:</b>	4
1.	Cell- Morphology - Functions of organelles: Cell membrane, nucleus, mitochondria. ribosomes. Lvsosomes.	
2.	Muscle nerve physiology: Neurons: Morphology, classification Nerve Fibres classification, resting membrane potential, action potential, properties, conduction of impulses in myelinated & nonmyelinated fibres.	8
3.	Neuroglia : Types & functions. Muscles: Types, structure of skeletal & smooth muscles, Sarcomere, mechanism of contraction, strength-duration curves, utilization time, rheobase & chronaxie.	
4.	<b>Blood : Composition, properties, functions.</b> RBC; Morphology, functions, count, physiological variations and life span Erythropoiesis - stages. essential factors. regulation.	15
5.	<b>Haemoglobin:</b> Function, concentration, physiological variations Fate of Hb - .Jaundice. tynes Determination of color index, MCH, MCV, MCHC, PCV - normal values M = Mean, C = Corpuscular, H = Haemoglobin concentration.	
6.	WBCs Morphology, functions of all types including T & B lymphocytes, total and differential counts, physiological variations, leukocytosis & Leukopenia.	
7.	Platelets: Morphology, count, functions, thrombocytopenia & bleeding time.	

	Plasma proteins : Concentrations and functions. Blood groups " Basis of blood grouping, Landsteiner's laws, ABO system, determination of blood groups, blood transfusion, complications of incompatible blood transfusion, RH group, erythroblastosis foetalis, prevention and treatment.	
8.	Haemostasis : mechanisms. Clotting mechanism: factors, intrinsic and extrinsic pathways, Disorders of clotting - haemophilia, vitamin K deficiency. Anti-clotting mechanisms: Antithrombin III, heparin, thrombomodulin & plasminogen, anticoagulants.	
9.	Anaemias: nutritional, aplastic, megaloblastic, iron deficiency. Effects of anaemia.	
10.	Blood volume : Normal values, determination, regulation.	
11.	Lymph : formation, circulation, composition, functions.	
<b>II.</b>	<b>Gastrointestinal System:</b>	<b>10</b>
1.	Salivary secretion : composition, functions, regulation (Deglutition - DESIRABLE TO KNOW).	
2.	Stomach : functions. Gastric juice : composition, functions, regulation, gastrin, gastric emptying time.	
3.	Pancreas : composition, function, regulation of pancreatic juice secretion. Secretion, cholecystokinin - pacreozymmin.	
4.	Liver : functions. Bile : composition, functions, Gall bladder: functions, regulation of emptying	
5.	Succus entericus : composition, function, regulation of secretion.	
6.	Movements of small and large intestines. Defaecation.	
<b>III.</b>	<b>Respiratory System :</b>	<b>12</b>
1.	Physiological anatomy of the lungs.	
2.	Definitions of terms used in respiratory physiology : Eupnoea, Hyperpnoea, tachypnoea, apnoea, dyspnoea.	
3.	Mechanics of breathing - intrapulmonary and intrapleural pressure changes during a respiratory cycle.	
4.	Spirometry-lung volumes and capacities. Vital capacity, times vital capacity, maximal voluntary ventilation.	
5.	Dead space : types, measurement of anatomical dead space. Pulmonary & alveolar ventilation.	
6.	Surfactant : production, functions, respiratory distress syndrome. (Ventilation perfusion ration: DESIRABLE TO KNOW)	
7.	Oxygen transport : Oxy Hb dissociation curves, factors affecting it.	
8.	Carbon dioxide transport : forms. chloride shift (Hamburaers phenomenon)	

9.	Regulation of respiration : Neural regulation : centers - Dorsal Group of Respiratory Neurons (DRG), Ventral group of respiratory neurons (VRG), Nuclear Para Brachialis medialis (NPBL), Hering-breuer reflex.	
10.	Chemical regulation : peripheral and central chemoreceptors, ventilatory responses to oxygen lack, carbon-di-oxide and H <sup>+</sup> ions, effect of voluntary hyper ventilation.	
11.	Hypoxia : Types and effects, acclimatization to high attitudes. Cyanosis, asphyxia, Artificial respiration.	
<b>IV.</b>	<b>Cardiovascular System:</b>	
1.	Plan of CVS Greater and Lesser Circulation. Physiological anatomy of the heart, nerve supply. Origin and spread of cardiac impulse. Structure and properties of cardiac muscle. Cardiac cycle : Intraventricular pressure and volume curves Heart sounds, causes, characteristics and significance Normal ECG, leads causes of waves, P-R interval	<b>15</b>
2.	Cardiac output : Definitions, normal values, physiological variations, determination, (Principles underlying the methods only), regulation.	
3.	Arterial blood pressure : Definitions, normal values, physiological variations, factors maintaining blood pressure, Regulation - Vasomotor control, role of afferents to Vasomotor centre (VMC)-baro receptors, Bainbridge reflex, chemoreceptors, hypertension. Heart rate-physiological variations, sinus arrhythmia, Marey law, Bainbridge reflex, chemo receptors, radial pulse.	
4.	Hypovolaemic (Haemorrhagic) shock, physiological basis of signs and symptoms	
5.	Coronary circulation.	
<b>V.</b>	<b>Renal System:</b>	
1.	Functions of kidneys. Nephrons - cortical & juxtamedullary. Juxta glomerular apparatus - functions.	<b>8</b>
2.	Mechanism of urine formation : ultra filtration, GFR - Factors affecting, selective reabsorption- sodium, urea, water, glucose.	
3.	Tubular secretion	
4.	Water excretion, mechanism of urine concentration. Concept of clearance-insulin, PAH & urea clearances. Micturition, Innervation of bladder, cystometrogram, diuresis.	
<b>VI.</b>	<b>Endocrinology:</b>	
1.	Major endocrine glands. Hormone: definition, properties, mechanisms of action. Anterior pituitary : Hormones and their functions, regulation of each hormone, disorders - Gigantism, acromegaly, dwarfism.	<b>14</b>

2.	Posterior pitrtry : hormones - site of synthesis, regulation, diabetes insipidus.	
3.	Thyroid : synthesis of hormones, actions and functions, regulation, disorders : simple goitre, myxoedema, cretinism, Graves disease.	
4.	Adrenal cartex : classification of hormones, actions, functions, regulation of secretion of cortisol and aldosterone.	
5.	Adrenal medulla : actions of adrenaline and noradrenaline, regulation of secretion.	
6.	Endocrine pancreas : hormones, actions, functions, regulation of secretion. Regulation of blood glucose level, diabetes mellitus.	
7.	Parathyroids : hormones, actions of hormones, regulation of secretion. Hypo- & hyper parathyroid conditions, tetany - signs. Calcitonin - source, actions.	
8.	Regulation of blood calcium level - Calcitriol.	
<b>VII.</b>	<b>Reproductive Physiology:</b>	<b>06</b>
1.	Male reproductive system : functions of testes, puberty, spermatogenesis, actions of testosterone, regulation of secretion, of semen.	
2.	Female reproductive system : Structure of ovary & Uterus, hormones, actions, regulation. Menstrual cycle, Hormonal basis of changes in menstrual cycle physiological changes during pregnancy. Action of oestrogen and progesterone, Functions of placenta, Lactation, milk ejection reflex.	
3.	Family Planning Methods : In the males : Coitus interruptus, condoms, vasectomy.	
4.	In females: Rhythm method, Intra Uterine Contraceptive Devise (IUCD), oral contraceptives, tubectomy.	
<b>VIII.</b>	<b>Nervous System:</b>	<b>10</b>
1.	Synapse : Types, properties Sensory receptors : definition, classification, properties. Reflex action : Definition reflex arc, classification, general properties. Pathways for fine touch, pressure, proprioception, crude touch, thermal and pain sensations, referred pain.	
2.	Spino-cerebellar tracts : pathway and function. Pyramidal tracts: origin, course, termination and functions. Signs of upper & lower motor neurone lesions. Functions of Cerebellum, Basal ganglia, Thalamus, Hypothalamus. Signs of Cerebellar disorders & Parkinson's disease. (Reticular formation, EEG, Sleep (NREM, REM)) Functions of Limbic system, Higher function of Brain - Memory, Learning & Motivation. (DESIRABLE TO KNOW)	
3.	Cerebral cortex : lobes & functions.	
4.	Autonomic nervous system : Organization & functions.	
5.	Cerebrospinal fluid : formation, circulation, composition and function, Lumbar puncture.	

6.	Regulation of body temperature.	
<b>IX.</b>	<b>Special Senses:</b>	<b>18</b>
1.	Vision : physiological anatomy of eye ball, functions of iris, aqueous humor, lens, rods & cones. Accommodation to near vision.	
2.	Refractive errors : Myopia, hypermetropia, presbyopia & astigmatism. Visual acuity, pupillary reflexes.	
3.	Visual pathways.	
4.	Audition : Anatomic consideration, functions of outer, middle & inner ear, cochlea, organ of corti, mechanism of hearing.	
5.	Auditory pathways, deafness - types & tests	
6.	Taste : taste buds, primary taste sensation, pathway for taste sensation	
7.	Smell : receptors, olfactory pathways.	

**Practicals :**

**60 Hours**

Sl. No.	To be done by Students :	Hours
1.	Study of Microscope and its uses	02
2.	Collection of blood and study of haemocytometer	02
3.	Haemoglobinometry	02
4.	Determination of RBC count	08
5.	Determination of WBC count	04
6.	Determination of blood groups	02
7.	Leishman's staining and differential leucocyte count	10
8.	Calculation of blood indices	02
9.	Determination of bleeding time	01
10.	Determination of clotting time	01
11.	Blood pressure recording	04
12.	Auscultation of Heart sounds	04

**Demonstrations (only)**

Sl. No.	To be done by Students :	Hours
1.	Determination of Erythrocyte Sedimentation rate (ESR)	02
2.	Determination of packed cell volume (PCV)	02
3.	Determination of specific gravity of blood	02
4.	Fragility test for RBC	02
5.	Clinical examination of chest	02
6.	Determination of vital capacity	02
7.	Artificial respiration	02
8.	Demonstration of deep and superficial reflexes	02
9.	Activity of frog's heart and effects of Acetyl Choline, Atropine and Adrenaline.	02
	<b>Total</b>	<b>60</b>

## **DESIRABLE TO KNOW**

Transport mechanisms

Neuromuscular junction, excitation contraction coupling, Myasthenia gravis, Rigor Mortis

Body fluid compartments

Principles of measurement, normal values

Blood:

Development of WBC's & platelets

Electrophoresis, Plasma pheresis

Blood bank.

Respiratory system:

Compliance of the lungs

P 50 value, Co-efficient of oxygen utilization

Dysbarism, Dyspnoea - Dyspnoeic index

Non-respiratory function of respiratory system.

Cardio vascular system :

Cardiovascular changes in muscular exercise.

Renal system:

TmG, renal threshold for glucose, tubular load for glucose.

Counter current mechanism

Endocrinology:

Synthesis of thyroid hormone.

Disorders - Addison's disease, Cushings syndrome, Conn's Syndrome,

Adrenogenital syndrome, Pheochromocytoma

Methods of study of endocrine glands.

Central nervous system.

Reflexes - Flexion reflex, stretch reflex, reverse stretch reflex.

Connections of cerebellum, basal ganglia, Thalamus & hypothalamus

Functions of Vestibular apparatus - Reticular formation

EEG - sleep, Wakefulness.

Methods of study of functions of nervous system special senses,

Effects of lesions of visual pathways.

Field of vision, colour vision, colour blindness.

Structure of thyroid, pituitary, pancreas, parathyroid, Adrenal cortex and medulla.

Gastrointestinal function : Deglutition.

Respiratory System: Ventilation perfusion ration.  
 Nervous system: Reticular formation, EEG, Sleep (NREM, REM), functions of Limbic system, Higher functions of brain - Memory, Learning & Motivation.

**Scheme of Examination**

**A. Theory :**

**35 Marks**

Distribution of Topics and Types of Questions

Contents	Type of Questions and Marks	Marks
Long Essay Questions preferably from 1. Blood 2. Gastro intestinal tract 3. Cardio Vascular System 4. Respiratory System 5. Endocrines 6. Reproductive System	Long Essays 01 x 10 marks	10
Short Essay Questions should be set from all the chapters. (Except the chapter on which a Long Essay Question has been set)	Short Essay 03 X 5 marks	15
Short Answer Questions should be set from all the chapters. (Except the chapter on which a Long Essay Question has been set)	Short Answers 05 x 2 marks	10
	<b>Total</b>	<b>35 marks</b>

**B. Viva Voce**

**: 10 Marks**

**C. Internal Assessment - Theory : 05 marks, Practicals**

**: 05 marks**

**D. Practicals**

**: 45 Marks**

Major Experiments - 30 Marks

Any one of the Major Experiments

1. R.B.C. Count
2. W.B.C. Count
3. Differential Count
4. Blood Pressure Recording

Minor Experiments - 15 Marks

Any one of the minor Experiments

1. Determination of Blood Groups
2. Determination of Bleeding & Clotting time
3. Haemoglobin Estimation
4. Calculation of absolute Haematological Indices - MCH , MCV, MCHC

**Text Books Recommended:**

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Text book of Medical Physiology.	Guyton Arthur	09th	1999	Prism & Sounder's Bangalore	Rs.515/-
Concise medical physiology	Chaudhuri Sujit. K	2nd	1998	Central Book Agency Calcutta	Rs.495/-
Human Physiology Vol - I	Chatterjee C. C.	11th	1998	Medical Allied Agency Calcutta	Rs.130/-
Human Physiology Vol - II	Chatterjee C. C.	10th	1998	Medical Allied Agency Calcutta	Rs.120/-

**Reference Books:**

Review of Medical Physiology	Ganong William. F	18th	1989	Appleton & Lang USA	\$18.00
Physiological basis of Medical practice	Best & Taylor	10th	1999	Willian & Wilkins Hongkong London	\$40.00

**Biochemistry, Nutrition and Dietics**  
**Theory : 70 hours**

Sl.No	Must Know	Desirable to Know
1.		Introduction to biochemistry and its scope in dentistry. (1 hrs)
2.	<b>Carbohydrates: (4 Hrs.)</b> 1. Definition 2. Classification 3. Isomerism of Sugars 4. Physiologically important mono, di and polysaccharides 5. Glycogen, starch, cellulose 6. Mucopolysaccharides - hyaluronic acid, chondroitin sulphate, heparin	
3.	<b>Amino Acids (6 Hrs.)</b> 1. Classification based on structure and nutritional importance 2. Optical activity 3. Isoelectric pH 4. Physiologically active peptides <b>Proteins-</b> 5. Definition 6. Functions 7. Classification 8. Structure 9. Denaturation 10. Plasma Proteins and their separation by electrophoresis 11. Immunoglobulins 12. Haemoglobin and its abnormal forms	Special features and organisation of Proteins, collagen, structure and composition, muscle protein-actin and myosin
4.	<b>Lipids: (4 Hrs.)</b> 1. Definition 2. Classification 3. Functions 4. Fatty Acids 5. Neutral Fats 6. Phospholipids 7. Cholesterol 8. Lipoproteins	
5.	<b>Nucleic Acids : (3 hrs)</b> 1. Composition 2. Structure & Types of Deoxy ribonucleic acid (DNA) & Ribonucleic acid (RNA) 3. Nucleosides and Nucleotides and their importance	

Sl.No	Must Know	Desirable to Know
6.	<p><b>Vitamins: (8 Hrs.)</b></p> <ol style="list-style-type: none"> <li>1. Definition</li> <li>2. Classification, Chemistry, Sources, Requirement, Function, Metabolic role and <b>Deficiency signs of vitamins: A, D, E, K, C, Thiamin, Riboflavin, Niacin, Pyridoxine, Folic Acid, Cyanocobalamine. .</b></li> </ol>	Genetic Code
7.	<p><b>Enzymes: (6 Hrs.)</b></p> <ol style="list-style-type: none"> <li>1. Definition</li> <li>2. Classification</li> <li>3. Chemical nature</li> <li>4. Enzyme specificity, mechanism of action</li> <li>5. Properties of enzymes</li> <li>6. Coenzymes and cofactors</li> <li>7. Holoenzyme</li> <li>8. Proenzyme</li> <li>9. Isoenzyme</li> <li>10. Factors influencing enzyme activity</li> <li>11. Enzyme inhibition-types and examples</li> </ol>	Diagnostic enzymes
8.	<p><b>Carbohydrate Metabolism (8 Hrs.)</b></p> <ol style="list-style-type: none"> <li>1. Digestion and absorption of carbohydrates</li> <li>2. Glycolysis</li> <li>3. Cori's cycle</li> <li>4. Citric acid cycle</li> <li>5. Energetics of glucose oxidation</li> <li>6. Glycogenolysis</li> <li>7. Glycogenesis</li> <li>8. Hexose monophosphate shunt</li> <li>9. Regulation of blood glucose</li> </ol>	Fermentation, biochemical changes during muscular contraction, electron transport chain, oxidative phoaphorylation, respiratory poisons, oxygen toxicity, gluconeogenesis, glycogen storage disorders.
9.	<p><b>Lipid Metabolism (6 Hrs.)</b></p> <ol style="list-style-type: none"> <li>1. Digestion and absorption of lipid</li> <li>2. Beta oxidation of fatty acids and its energetics</li> <li>3. Ketone body formation</li> <li>4. Utilization</li> <li>5. Ketoacidosis</li> </ol>	Synthesis of palmitic acid and triglycerides, fatty liver, and lipotropic action, metabolism during starvation
10.	<p><b>Protein Metabolism (8 Hrs.)</b></p> <ol style="list-style-type: none"> <li>1. Digestion and absorption of Amino acids</li> <li>2. Synthesis of Proteins</li> <li>3. Deamination of Amino acids</li> <li>4. Transamination</li> <li>5. Decarboxylation</li> </ol>	<b>Glycine metabolism</b> <b>Synthesis of important products like creatine, noradrenaline, adrenaline, thyroxin, serotonin, heme from amino acids</b>

Sl.No	Must Know	Desirable to Know
	6. Production and fate of ammonia 7. Urea cycle pathway 8. Methionine metabolism 9. Phenylalanine metabolism 10. Phenylketonuria, albinism, Alkaptonuria	
11.	<b>Nutrition and Diets (5 Hrs.)</b> 1. Dietary factors 2. Basal metabolic rate 3. Biological value of protein 4. Glucose sparing action 5. Essential amino acids 6. Dietary fibre 7. Essential fatty acids 8. Balanced diet	Principles of calorimetry, Respiratory quotient, Specific Dynamic Action of foods, protein-calorie malnutrition (kwashiorkor and marasmus), nitrogen balance, milk-composition and functions, determination of Basal Metabolic Rate (BMR)
12.	<b>Mineral metabolism (5 Hrs.)</b> <b>Distribution, sources, functions, requirements, absorption, metabolism, effect of deficiencies of</b> 1. Calcium and phosphorus 2. Iron 3. Iodine 4. Fluorine	
13.	<b>Liver Function Tests: (3 hrs)</b> 1. Liver function tests 2. Importance of alkaline phosphatase 3. Galactose tolerance test	Van den Bergh reaction Albumin / Globulin Ratio Bromsulphthalein Excretion test Serum Glutamate Pyruvate Transaminase (SGPT) and other enzymes
14.	<b>pH and its biological importance (2 Hrs.)</b> 1. Acids and bases 2. Buffers 3. Acid base balance 4. Acidosis and alkalosis	Henderson-Hasselbatch equation, role of the kidney in acid base balance.
15.	<b>Renal Function Test (1 Hr.)</b> 1. Urea clearance test 2. Creatinine Clearance	
16.	<b>Blood Constituents (1Hr.)</b> Normal and abnormal variations of 1. Calcium and phosphorus 2. Creatinine 3. Alkaline and acid phosphatase	Normal and abnormal variations of Urea, cholesterol, bilirubin, uric acid, transaminases.

**Practicals: 60 hrs**

1. Reactions of monosaccharides - glucose & fructose
2. Reactions of disaccharides - lactose, maltose and sucrose.
3. Preparation of osazones from glucose, fructose, lactose & maltose
4. Reactions of polysaccharides - starch
5. Identification of unknown carbohydrate
6. Colour reactions of proteins - albumin.
7. Colour reactions of proteins - gelatin & peptone.
8. Colour reactions of proteins - casein.
9. Precipitation reactions of albumin
10. Precipitation reactions of gelatin and peptone
11. Precipitation reactions of - casein
12. Identification of unknown protein
13. Reactions of urea, uric acid and creatinine
14. Identification of physiologically important constituents.
15. Composition of saliva and starch digestion by salivary amylase.
16. Qualitative analysis of gastric juice - normal and abnormal contents
17. Urine analysis - normal constituents.
18. Urine analysis - abnormal or pathological constituents.
19. Determination of titrable acidity and ammonia content in urine.
20. Determination of creatinine content in urine, calculation of creatinine clearance.
21. Estimation of Blood glucose.

**Demonstration Sessions : (Desirable to know)**

1. Colorimeter
2. Electrophoresis & Chromatography
3. Estimation of Serum calcium and phosphorus
4. Estimation of Bilirubin
5. Estimation of Urea in blood
6. Estimation of total protein in blood serum
7. Preparation of haemin crystals
8. Discussion of clinical charts - Glucose Tolerance Test (GTT)
9. Spotting of specimens -  
Haemin, Osazone - Microscopy, Ryle's tube, Folin -wu tube, Urinometer, Tests - Biuret reaction, Millon's reaction, Jaffe's reaction, Barfoed's reaction.

## Scheme of Examination

### A. Theory:

**35 Marks**

Distribution of Topics and Types of Questions

Contents	Type of Questions and Marks	Marks
Chemistry of Carbohydrates, proteins, lipids and amino acids. Fat soluble and water soluble vitamins. Enzymes. Metabolism of carbohydrates, proteins, lipids and minerals.	Long Essays 01 x 10 marks	10
Chemistry and metabolism of: carbohydrates, lipids, proteins, nucleic acids, minerals. Fats soluble and water soluble vitamins, Nutrition and dietetics, Liver function tests, pH and its biological importance, Renal function tests, Blood constituents, Biological oxidation.	Short Essay 03 X 5 marks	15
Chemistry and metabolism of: carbohydrates, lipids, proteins, nucleic acids, minerals. Fats soluble and water soluble vitamins, Nutrition and dietetics, Liver function tests, pH and its biological importance, Renal function tests, Blood constituents.	Short Answers  05 x 2 marks These questions may be selected from both 'must know' and 'desirable to know' category	10
	Total	35 marks

Preferably, 75% of questions can come from the 'must know' category which helps the candidate to pass, remaining may come from 'desirable to know' category, which places him/her in the merit category.

### B. Viva - Voce:

**10 Marks**

### C. Internal Assessment - Theory : 05 Marks, Practicals : 05 Marks

#### Internal Assessment (for theory):

75% - Questions from MUST KNOW Category

25% - Questions from DESIRABLE TO KNOW Category

**D. Practicals:**

**45 Marks**

- |  |   |                 |
|--|---|-----------------|
| 1. One procedure for quantitative estimation             | = | 20 marks        |
| 2. One procedure for qualitative analysis                | = | 15 marks        |
| 3. Interpretation of Laboratory results in a given chart | = | 10 marks        |
| <b>Total</b>   |   | <b>45 marks</b> |

**The following are suggested:**

**Quantitative Estimation (Any ONE estimation to be done)**

1. Estimation of Blood Glucose - using Folin-wu method, using deproteinized blood.
2. Determination of Creatinine in Urine - using Jaffes's method
3. Determination of Titrable acidity and Ammonia content of Urine - using Malfatti's Method

**Qualitative Analysis (Any ONE analysis to be done)**

1. Identification of Carbohydrates - glucose, fructose, sucrose, lactose, maltose, starch.
2. Colour Reactions - albumin
3. Precipitation Reactions - albumin
4. Identification of Proteins - albumin, gelatin, casein, peptone
5. Urine Analysis - normal constituents
6. Urine Analysis - pathological constituents

**Chart Interpretation (Interpretation of ONE Clinical chart)**

1. Glucose Tolerance Test
2. Values of Blood Constituents and their clinical variation: - urea, cholesterol, calcium, phosphorus, bilirubin.

**Recommended Books:**

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
A Text book of Biochemistry for Dental Students	Harbanslal	1st	1995	CBS Pub. New Delhi	Rs. 130/-
Concise Clinical Medical Biochemistry	Pattabhiraman	--	1986	Prithvi Pub.. Bangalore	Rs. 85/-
Fundamentals of Biochemistry	A. C. Deb	6th	1998	New Central Book Agency Calcutta	Rs. 395/-
Text Book of Biochemistry	AVS Rama Rao	7th	1995	UBSPD with LKS pub. Vishakapatnam	Rs. 135/-
Textbook of Medical Biochemistry	S. Ramakrishnan K.G.Prasanna R. Rajan	3rd	2001	Orient Longman Hyderabad	Rs. 410/-

**Reference Books**

Review of Biochemistry	Harpers	24th	1996	USA Appleton and Lange Pub.	US \$ 19.50
Basic and Applied Dental Biochemistry	William R.D & Elliot J.C.	2nd	1990	Singapore Langman Pub.	US \$ 19.50
Principles of Biochemistry	Albert Lehninger	2nd	1993	New Delhi CBS pub.	Rs. 695/-

## I BDS

# Human Oral and Dental Anatomy, Embryology, Physiology and Histology

Theory - 105 Hrs.

<b>I. DENTAL ANATOMY:</b>	
1. Introduction, Dental Anthropology & Comparative Dental Anatomy	Sl.No. 1 To 4 - 3 HRS.
2. Function of teeth.	
3. Nomenclature.	
4. Tooth numbering systems (Different system) (Dental formula).	
5. Chronology of deciduous and permanent teeth. (First evidence of calcification, crown completion, eruption and root completion).	2 Hrs
6. Deciduous teeth - a. Nomenclature. b. Importance of deciduous teeth. c. Form & function, comparative dental, Anatomy, fundamental curvature.	4 Hrs.
7. Gross morphology of deciduous teeth.	5 Hrs.
8. General differences between deciduous and permanent teeth.	
9. Morphology of permanent teeth. - Chronology, measurements, description of individual surface and variations of each tooth.	3 Hrs.
10. Morphological differences between incisors, premolars and molars of same arch.	10 Hrs.
11. Morphological differences between maxillary and mandibular. incisors, canines, premolars and molars of the opposite arch.	5 Hrs.
12. Internal Anatomy of Pulp.	1 Hr.
13. Occlusion: a. Development of occlusion. b. Dental arch form. c. Compensating curves of dental arches. d. Angulations of individual teeth in relation to various planes. e. Functional form of the teeth at their incisal and occlusal thirds. f. Facial relations of each tooth in one arch to its antagonist or antagonists in the opposing arch in centric occlusion. g. Occlusal contact and interscusp relations of all the teeth of one arch with those in the opposing arch in centric occlusion. h. Occlusal contact and interscusp relations of all the teeth during the various functional mandibular movements.	8 Hrs.

<p>i. Neurobehavioural aspect of occlusion.          Temporomandibular Joint (T.M.J.):</p> <ul style="list-style-type: none"> <li>- Gross Anatomy and articulation.</li> <li>- Muscles (Muscles of mastication).</li> <li>- Mandibular position and movements.</li> <li>- Histology.</li> <li>- Clinical considerations with special emphasis on Myofascial Pain Dysfunction Syndrome (MPDS) - (Desirable to Know)</li> </ul>	
<b>ORAL PHYSIOLOGY:</b>	
1. Theories of calcification.	01 hr.
2. Mastication and deglutition.	01 hr.
<b>Oral Embryology, Anatomy and Histology:</b>	
1. Development and growth of face and jaws.	1 hr.
2. Development of tooth.	6 hrs.
3. Cranial nerves with more emphasis on V, VII and IX.	1 hr.
4. Blood supply, nerve supply and lymphatic drainage of teeth and surrounding structures.	1 hr.
5. Cell - structure and function.	1 hr.
6. Maxillary sinus - Structure, Variations, Histology function and clinical considerations.	3 hrs.
7. Salivary Glands - Classification, structure, function, Histology, Clinical Considerations and age changes.	4 hrs.
8. Oral Mucous membrane: <ul style="list-style-type: none"> <li>- Definitions, General consideration.</li> <li>- Functions and classifications.</li> <li>- Structure and microscopic appearance of gingiva, palate, lips, alveolar mucosa, tongue, floor of mouth.</li> <li>- Gingival sulcus and dento gingival junction.</li> <li>- Clinical considerations and age changes.</li> </ul>	8 hrs.
<b>ENAMEL:</b> <ul style="list-style-type: none"> <li>- Physical characteristics, chemical properties structure.</li> <li>- Development - Life cycle of ameloblasts Amelogenesis and Mineralisation.</li> <li>- Clinical considerations.</li> <li>- Age changes.</li> </ul>	8 hrs.
<b>DENTIN:</b> <ul style="list-style-type: none"> <li>- Physical characteristics, chemical properties, structure.</li> <li>- Types of dentin.</li> <li>- Dentin innervation and hypersensitivity.</li> <li>- Development - Dentinogenesis and mineralisation.</li> <li>- Clinical considerations.</li> <li>- Age Changes.</li> </ul>	6 hrs.

<p><b>PULP :</b>  Anatomy, structural features, functions, pulp organs.</p> <ul style="list-style-type: none"> <li>- Developments.</li> <li>- Clinical consideration</li> <li>- Age changes.</li> </ul>	5 hrs.
<p><b>CEMENTIUM:</b></p> <ul style="list-style-type: none"> <li>- Physical characteristics, chemical properties, structure.</li> <li>- Cementogenesis.</li> <li>- Clinical consideration</li> <li>- Age changes.</li> </ul>	5 hrs.
<p><b>PERIODONTAL LIGAMENT:</b></p> <ul style="list-style-type: none"> <li>- Cells and fibers</li> <li>- Functions</li> <li>- Development</li> <li>- Clinical Considerations.</li> <li>- Age Changes</li> </ul>	5 hrs.
<p><b>ALVEOLAR BONE:</b></p> <ul style="list-style-type: none"> <li>- Physical characteristics, chemical properties structure.</li> <li>- Structure</li> <li>- Development.</li> <li>- Internal reconstruction.</li> <li>- Clinical consideration.</li> </ul>	5 hrs.
<p>HISTOCHEMISTRY OF ORAL TISSUES. (Tissue processing)</p>	4 Hrs.
<p>THEORIES OF ERUPTION AND SHEDDING. (Physiological tooth movement)</p>	4 Hrs.

**PRACTICAL : 250 Hours**

**Preparation of Ground sections, haematoxylin & Eosin sections & decalcified section - (Desirable to know).**

<p><b>DENTAL ANATOMY:</b></p> <p>Carving on wax blocks:-</p> <ol style="list-style-type: none"><li>a. Cube, rectangle, cone and cylinder</li><li>b. Individual tooth - Only permanent teeth of both arches. - Central, Incisors, Lateral, Canines, Premolars and 1st molar.</li></ol>	
<p><b>HISTOLOGY:</b></p> <p>List of Histology slides: Development of tooth:</p> <ol style="list-style-type: none"><li>1. Bud stage of tooth development.</li><li>2. Cap stage of tooth development.</li><li>3. Early bell stage of tooth development.</li><li>4. Late Bell stage of tooth development.</li><li>5. Root formation.</li></ol>	
<p><b>ENAMEL :</b></p> <ol style="list-style-type: none"><li>1. Enamel rod.</li><li>2. Hunter-Schreger Bands</li><li>3. Tufts, Lamellae, Spindles.</li><li>4. Incremental lines of Retzius.</li><li>5. Neonatal line.</li><li>6. Gnarled Enamel.</li></ol>	
<p><b>DENTIN :</b></p> <ol style="list-style-type: none"><li>1. Dentino - Enamel junction.</li><li>2. Dentinal Tubules.</li><li>3. Incremental lines of Von Ebner.</li><li>4. Contour lines of Owen.</li><li>5. Neonatal line.</li><li>6. Tomes granular layer.</li><li>7. Interglobular Dentin.</li><li>8. Secondary Dentin.</li><li>9. Intratubular Dentin.</li><li>10. Intertubular Dentin.</li><li>11. Dead Tracts</li><li>12. Tertiary Dentin</li><li>13. Sclerotic Dentin</li></ol>	
<p><b>CEMENTUM:</b></p> <ol style="list-style-type: none"><li>1. Cellular cementum.</li><li>2. Acellular cementum.</li></ol>	

<ul style="list-style-type: none"> <li>3. Cemento enamel junction <ul style="list-style-type: none"> <li>- Type 1 - 60% type - Overlapping.</li> <li>- Type 2 - 30% type - Butt</li> <li>- Type 3 - 10% type - GAP type</li> </ul> </li> <li>4. Sharpey's fibers.</li> <li>5. Hypercementosis.</li> <li>6. Cementum</li> </ul>	
<p><b>PULP:</b></p> <ul style="list-style-type: none"> <li>1. Zones of Pulp.</li> <li>2. Pulp stones.</li> </ul>	
<p><b>PERIODONTAL PRINCIPAL LIGAMENT:</b></p> <ul style="list-style-type: none"> <li>1. Principal fibers of Periodontal ligament <ul style="list-style-type: none"> <li>- Apical, Horizontal, Oblique, Alveolar crest, Interradicular, Transeptal</li> </ul> </li> </ul>	
<p><b>ALVEOLAR BONE:</b></p> <ul style="list-style-type: none"> <li>1. Haversian system.</li> <li>2. Trabeculated bone.</li> <li>3. Mature and immature bone.</li> </ul>	
<p><b>SALIVARY GLANDS:</b></p> <ul style="list-style-type: none"> <li>1. Mucous gland.</li> <li>2. Serous gland.</li> <li>3. Mixed gland.</li> </ul>	
<p><b>MAXILLARY SINUS:</b></p> <p>Sinus lining (Pseudostratified ciliated columnar) (Desirable to know)</p>	
<p><b>ORAL MUCOUS MEMBRANE:</b></p> <ul style="list-style-type: none"> <li>1. Parakeratinised epithelium.</li> <li>2. Orthokeratinised epithelium.</li> <li>3. Palate - Anterolateral zone.</li> <li>4. Palate - Posterolateral zone.</li> <li>5. Alveolar mucosa.</li> <li>6. Vermilion border of lip.</li> <li>7. Tongue - Circumvallate Papillae. <ul style="list-style-type: none"> <li>- Fungiform Papillae</li> <li>- Filiform Papillae</li> </ul> </li> <li>8. Dentogingival junction.</li> <li>9. Skin</li> </ul>	
<p><b>Temporo Mandibular Joint (T.M.J.):</b></p> <ul style="list-style-type: none"> <li>1. Histological section (Desirable to know).</li> </ul>	

**LECTURE DEMONSTRATION :**

1. Identification of Individual teeth.
  - Deciduous.
  - Permanent.
2. Mixed dentition using study models.
3. Cross - Section & T.S. of mandible and maxilla with teeth present using study models.  
 Demonstration of preparation of ground section, Decalcification, Paraffin section & H & E Staining.

**Scheme of Examination**
**A. Theory : 70 Marks**  
**Distribution of Topics and Type of Questions**

Contents	Type of Questions and Marks	Marks
A. Dental anatomy - one question - 10 marks B. Dental histology - one question - 10 marks	Long Essays 2 x 10 marks	20
A. Oral histology - five questions - 25 marks B. Dental anatomy - two questions - 10 marks C. Oral physiology - one question - 05 marks	Short Essays 08 x 5 marks	40
A. Oral histology - two questions - 04 marks B. Dental anatomy - one question - 02 marks C. Oral physiology - one question - 02 marks D. Oral embryology - one question - 02 marks	Short Answers 05 x 2marks	10
	<b>Total</b>	<b>70</b>

**B. Viva Voce : 20 Marks****C. Internal Assessment - Theory : 10 marks, Practicals : 10 marks****D. Practicals : 90 Marks**

- |             |                                 |               |
|-------------|---------------------------------|---------------|
| 1. Carving  | 30 marks                        | 1 hour 15 min |
| 2. Spotters | 60 marks (20 spotter x 3 marks) | 1 hour 15 min |

- 13 histology and ground section slides
- 4 tooth identification
- 3 casts for identifications of teeth, numbering system and age assessment.

**Text Books Recommended :**

<b>Name of the Book &amp; Title</b>	<b>Author</b>	<b>Edn</b>	<b>Yr. of Publ.</b>	<b>Publ.'s Name Place of Publ.</b>	<b>Price</b>
Orban's Oral Histology and Embryology	Orban's	10th	1990	American Publication Ontario, Canada	Rs. 350/-
Oral Histology - Development, Structure and Functions	A. R. Tencate	5th	1998	Mosby A Harcourt Health Science Company USA	\$ 25.00
Dental Anatomy, Physiology and Occlusion	Wheeler's	7th	1993	Prism Book Pvt. Ltd. Bangalore	Rs. 300/-

**REFERENCE BOOK:**

- Dental anatomy by Scoot & Simon.
- Oral Physiology by Lavelle.
- Oral Physiology by Jenkins.
- Dental Anatomy by Krauss.
- Dental Anatomy - It's relevance to dentistry 5th edition by Woelfel
- Illustrated Dental Embryology, Histology and Anatomy- 2nd edition By Bath- Balogh

## I BDS DENTAL MATERIALS

Sl. No.	Theory - 20 Hrs. Practical - 40 Hrs.	Total 60 Hrs.
1.	<b>Introduction:</b> a. Brief History of the development of the science of Dental Materials b. Aim of studying the subject of Dental Materials. c. Scope and requirements of Dental materials d. Spectrum of materials - Classification Clinical and laboratory applications	01
2.	<b>Structure and behaviour of matter:</b> a. Basic principles - Physical and mechanical properties, Chemical properties, biological properties, rheological properties, thermal properties, light, colour and esthetics. Tarnish and corrosion, surface properties and adhesion, biocompatibility allergy, toxicity, setting reactions. b. Enamel and Dentine and bone. c. Polymers d. Metals and alloys e. Ceramics f. Composites g. Standardisation and assessment of dental materials.	02
3.	<b>Impression materials and duplicating materials:</b> a. Requirements, classification. b. Desirable properties, composition, setting properties, advantages, disadvantages, indications and manipulation of inelastic and elastic materials. (Tray compound, impression compound, Low fusing compound, Impression plaster, Zinc oxide Eugenol impression paste, Non Eugenol paste, Alginate, Agar Elastomeric impression materials) Comparative studies between all.	03
4.	Gypsum products (Detail), die, cast and model materials (including brief account of electroformed dies):	02
5.	Waxes and baseplate materials - Contents, properties, manipulation and uses (Modeling wax, casting wax, boxing wax, utility wax, Sticky wax, impression wax, carding wax, preformed wax patterns	02
6.	<b>Denture base resins</b> a. Tray materials. b. Temporary base materials - contents, properties, manipulation, advantages and disadvantages.	02

Sl. No.	Theory - 20 Hrs. Practical - 40 Hrs.	Total 60 Hrs.
	c. Permanent base resins - types, composition, properties and technical consideration (Flasking, packing, curing, deflasking and processing errors) d. Others - Tissue conditioners, soft liners and hard liners.	
7.	<b>Tooth restorative materials - Classification and ideal properties :</b> a. Dental cements - classification ideal requirements of liners, base and luting cements. Composition, properties, chemistry of setting, manipulation and uses of silicate and silico phosphate cements (in brief), zinc phosphate, zinc polycarboxylate, calcium hydroxide, glass ionomer, modified glass ionomer and resin cement. Comparative studies of mechanical, biological and esthetic properties of all cements.	10
8.	Metals and Alloys - Solidification and microstructure of metals, classification of alloys, relevant physical and mechanical properties, annealing, heat treatment, soldering, welding, fluxes and ant fluxes.	03

**Practical Exercises : 40 Hours**

**II Exercises to be done by each student :**

- a. Impression material - 20 hours  
Manipulation and making impression and identifying setting time and defects.  
(Comparative studies included)
- b. Gypsum products - 20 hours

**Recommended Text Books**

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Science of Dental Materials	Kennet. J. Anusavice	11th	2007	W.B. Sunder's Company, USA	\$35.00
Notes on Dental Materials	E.C. Combe	06th	1992	Churchill Livingstone, UK	4.95 pounds
Applied Dental Material	John. F. Mc. Cabe	07th	1992	Oxford Blackwell Scientific pub. London	Rs. 320/-
Text Book of Dental Material	Craig. O. Brien	06th	1996	Mosby, USA	\$ 15.00
Restorative Dental Materials	Craig.	11th	2002	Mosby, USA	Rs. 675/-

# I BDS

## PRE-CLINICAL PROSTHODONTICS AND CROWN AND BRIDGE

### Practical: 100 Hours

1. Preparation of special trays
2. Preparation of temporary and permanent denture bases
3. Preparation of occlusion rims
4. Orientation of occlusion rims on articulator
5. Arrangement of teeth
6. Processing of complete dentures

### RECOMMENDED TEXT BOOKS

Author	Name of the Book & Title	Edition	Year. of Publ.	Publishers Name Place of Publ.	Price
Boucher	Prosthodontic Treatment of Edentulous Patients	XI	1997	Mosby St. Louis, Missouri, USA	\$ 76
Heartwell	Syllabus of Complete Denture	IV	1992	Varghese Publishing House	Rs 595
Tylman	Theory and Practice of Fixed Prosthodontics	VIII	1993	Ishiyaku Euro America Inc. 716, Hanley Industrial Court St. Louis Missouri, USA	\$ 69
McCracken	Removable Partial Denture	VIII	1989	CBS Publishers & Distributors Shadara, Delhi	Rs 350
Skinner	Science of Dental Materials	X	1996	W.B Saunders Company, Philadelphia, USA	\$ 35
Craig	Dental Materials, Properties & Manipulation	VI	1996	Mosby, St. Louis Missouri, USA	\$ 35

## II Year - BDS

### DENTAL MATERIAL

	<b>Theory - 60 Hrs. Practical - 200 Hrs.</b>	
1.	Chemistry of synthetic resins used in dentistry.	02
2.	Dental porcelains - types, composition, role played by each ingredient, manipulation, advantages and disadvantages, aluminous, porcelain, castable porcelain, metal fused porcelain, and porcelain repair materials.	05
3.	Tooth restorative materials - Classification and ideal properties : b. Cavity bases, liners and varnishes. c. Restorative resins - Brief history of resins as tooth restorative materials, filled resins (composite resins) - classification, chemistry of setting, composition, properties, uses, manipulation advantages and disadvantages, acid etching, bonding agents (Enamel and dentin bonding systems), Pit and fissure sealants.	12
4.	Direct filling Gold - types, advantages, disadvantages, brief study of manipulation (cold welding).	03
5.	Silver amalgam alloy - Brief history, classification, composition, role played by each ingredient, setting reaction, properties, manipulation and uses, comparative study of all types of silver amalgams Mercury Hygiene and Toxicity	04
6.	Casting gold alloys - Classification, corrosion, contents and role played by each ingredient, indications, white gold, uses.	03
7.	Dental casting investments - (Refractory materials) Classification, composition, setting reaction, manipulation and technical consideration.	03
8.	Casting procedures and casting defects, in general	04
9.	Base metal casting alloys - properties, composition and uses of Co-Cr, St. steel.	04
10.	Materials used in orthodontia - Luting cements, direct bonding agents, St. Steel, properties and gauzes of wires of gold, st. steel, Co-Cr and titanium alloys, brackets, sensitization.	06
11.	Abrasives and polishing agents - a. Clinical b. Laboratory.	04

Sl. No.	Theory - 20 Hrs. Practical - 40 Hrs.	Total 60 Hrs.
12.	Dental implant materials - History, biological properties and different designs.	02
13.	Miscellaneous - a. Infection control b. Artificial tooth material. c. Separating media d. Die spacers e. Tray adhesives f. Petroleum jelly g. Articulating paper h. Pressure indicating paste i. Endodontic materials j. Comparative studies between metallic and nonmetallic denture base. k. Bioglass l. Sprues m. Setting expansion, hygroscopic expansion, thermal expansion n. Dentifrices.	08

**Practical Exercises : 200 Hours**

**I Demonstration of manipulation of all materials for a batch not more than 8 students.**

**II Exercises to be done by each student:**

- a. Manipulation and pouring impressions - identify setting time and working time and working time with reference to proportion, water temp, and spatulation time.
- b. Self-cure and heat cure acrylic resin manipulation and curing.
- c. Cements - manipulation and studying setting time and working time for luting, base & restoration.
- d. Silver Amalgam - manipulation, trituration.

## Scheme of Examination

### A. Theory : 70 Marks

Distribution of Topics and Type of Questions :

Contents	Type of Questions and Marks	Marks
Conservative Dentistry Topics	Long Essays 1 x 10 marks	10
Prosthodontics topics	Long Essays 1 x 10 marks	10
Conservative and Prosthetic topics (Four questions from each subject)	Short Essays 8 x 5 marks	40
Orthodontia*	Short Essays 2 x 2 marks	04
Conservative and Prosthetics topics* (Five questions from each subject)	Short Answers 3 x 2 marks	06
	<b>Total</b>	<b>70</b>

**B. Viva Voce** : **20 Marks**

**C. Internal Assessment - Theory : 10 marks, Practicals : 10 marks**

**D. Practicals** : **90 Marks**

**1. Spotters:** Identify and write the composition and two important uses:

Spotters - 25 Nos.

Marks - 01 Each

Time - 02 Minutes each - 25 Marks

**2. Exercise No. 1 - 20 Marks**

Any one exercise of the following:

- Manipulation of impression compound and preparation of a plaster cast of U/L arch.
- Manipulation of alginate impression material and preparation of plaster cast of U/L arch.
- Manipulation of Zinc Oxide Eugenol impression paste, and preparation of cast of U/L arch.
- Manipulation of Rubber Base impression material and preparation of Stone cast

**3. Exercise No. 2 - 20 marks**

Manipulation of any one of the following Dental Cements.

- ZOE (Luting and Filling consistency)
- Zinc Phosphate Cement (Luting and Base consistency)
- Glass Ionomer Cement Type I/II (Luting/Filling consistency)

d. Polycarboxylate Cement (Luting consistency).

(Cements which are mixed for filling consistency should be filled in the cavity prepared in the extracted natural tooth / typhodont.)

**4. Exercise No. 3**

**- 25 marks**

- a. Trituration of Silver Amalgam and Condensation into the cavity prepared in extracted natural tooth/typhodont.
- b. Mixing to heat cure Acrylic resin and recording of time taken for all stages.

**Recommended Text Books**

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Science of Dental Materials	Kennet. J. Anusavice	11th	2008	W.B. Sunder's Company, USA	\$ 35.00
Notes on Dental Materials	E.C. Combe	06th	1992	Churchill Livingstone, UK	\$ 4.95
Applied Dental Material	John. F. Mc. Cabe	07th	1992	Oxford Blackwell Scientific Pub. London	Rs. 320/-
Text Book of Dental Material	Craig. O. Brien	06th	1996	Mosby, USA	\$ 15.00
Restorative Dental Materials	Craig.	11th	2002	Mosby, USA	Rs. 675

## II B.D.S PRE-CLINICAL PROSTHODONTICS

THEORY : 25 hrs, PRACTICALS -200 hrs 10 hrs / week ]

<b>I. Introduction to Prosthodontics - Scope and Definition</b>	
<b>A. Masticatory apparatus and function:</b> <ol style="list-style-type: none"> <li>1. Maxillae &amp; Mandible with &amp; without teeth.</li> <li>2. Muscles of mastication and accessory muscles of mastication.</li> <li>3. Brief anatomy of TMJ.</li> <li>4. Mandibular movements.</li> <li>5. Functions of teeth.</li> </ol>	Must Know 2 hrs
<b>B. Various branches of Prosthodontics and prosthesis:</b> <ol style="list-style-type: none"> <li>1. Scope &amp; limitation.</li> <li>2. Appliances v/s prosthesis.</li> <li>3. Dental prosthesis v/s non-dental prosthesis.</li> </ol>	Must Know 1 hr
<b>C. Effect of loss of teeth:</b> <ol style="list-style-type: none"> <li>1. On general health.</li> <li>2. On masticatory apparatus.</li> <li>3. Need of replace lost teeth.</li> </ol>	Must Know 1 hr
<b>D. Outline of Prosthodontics:</b> <ol style="list-style-type: none"> <li>1. Types of Prosthesis.</li> <li>2. Requirements of prosthesis- Physical, biological, esthetic considerations.</li> </ol>	Must Know 1 hr
<b>II. Introduction to components of Prosthesis</b>	
<b>A. Complete Denture Prosthesis:</b> <ol style="list-style-type: none"> <li>1. Various surfaces (Border and surface anatomy).</li> <li>2. Components - Base and Teeth.</li> </ol>	Must Know 1 hrs
<b>B. Removable Partial Denture:</b> <ol style="list-style-type: none"> <li>1. Classification.</li> <li>2. Major and minor Connectors.</li> <li>3. Direct retainers.</li> <li>4. Rests.</li> <li>5. Indirect retainers.</li> <li>6. Denture base.</li> <li>7. Artificial teeth.</li> </ol>	Must Know 2 hrs
<b>C. Fixed Partial Denture:</b> <ol style="list-style-type: none"> <li>1. Classification.</li> <li>2. Retainers.</li> </ol>	Must Know 1 hr

3. Pontics. 4. Connectors.	
<b>III.All related definitions and terminologies from glossary</b> <ul style="list-style-type: none"> <li>• Model</li> <li>• Cast</li> <li>• Impression</li> <li>• Occlusion rim</li> <li>• Temporary denture base</li> <li>• Permanent denture base</li> <li>• Occlusion</li> <li>• Face Bow &amp; Articulator</li> <li>• Jaw relation - orientation, vertical and centric</li> <li>• Christensen's phenomenon</li> <li>• Key of occlusion</li> <li>• Balanced occlusion</li> <li>• Abutment etc...</li> </ul>	Must Know 1 hr
<b>IV. Introduction to mouth preparation - in brief</b> <b>A. Complete Dentures</b> <ol style="list-style-type: none"> <li>1. General considerations</li> <li>2. Pre-prosthetic surgery</li> </ol>	Must Know 1 hr
<b>B. Removable partial dentures</b> <ol style="list-style-type: none"> <li>1. General considerations</li> <li>2. Occlusal rest preparation</li> <li>3. Modifying contours of the abutments</li> <li>4. Guide planes</li> <li>5. Elimination of undercuts</li> </ol>	Desirable to Know 1 hr
<b>C. Fixed Partial Dentures</b> <ol style="list-style-type: none"> <li>1. Principles of tooth preparation - in brief</li> <li>2. Retainers in brief</li> </ol>	Desirable to Know
<b>V. Introduction to all steps involved in fabrication of Prosthesis</b>	Must Know 1 hrs
<b>Clinical Steps in brief and laboratory steps in detail</b>	
<b>Impression Making</b> <ol style="list-style-type: none"> <li>1. Definition and requirements and types of impressions</li> <li>2. Various materials used for different impressions</li> <li>3. Different theories of impression making</li> </ol>	Must Know 2 hrs
<b>Impression Trays</b> <ol style="list-style-type: none"> <li>1. Definition, classification, materials, advantages and disadvantages</li> <li>2. Selection of trays</li> <li>3. Special trays</li> <li>4. Spacer design</li> </ol>	Must Know 1 hr

<p><b>Introduction to jaw relation record</b></p> <ol style="list-style-type: none"> <li>1. Definition and type</li> <li>2. Temporary denture base - Indications, Advantages, Disadvantages, materials used</li> <li>3. Occlusion rims - materials, shape, dimensions</li> <li>4. Clinical procedures of jaw relation recording in brief</li> </ol>	<p>Must Know 2 hrs.</p>
<p><b>Articulators and face bow</b></p> <ol style="list-style-type: none"> <li>1. Basic out line</li> <li>2. Need for articulators</li> <li>3. Definition, classification, parts, advantages, disadvantages of articulators</li> <li>4. Definitions, classification, parts, advantages, disadvantages and purpose of face bow transfer</li> <li>5. Demonstration of face bow transfer to an articulator on a dummy</li> </ol>	<p>Must Know 2 hrs.</p>
<p><b>Selection of Teeth</b></p> <ol style="list-style-type: none"> <li>1. Various guidelines for selection of teeth including dentogenic concept</li> <li>2. Arrangement of teeth in detail with various factors of esthetics, overjet, overbite etc</li> </ol>	<p>Must Know 1 hr</p>
<p><b>Occlusion</b></p> <ol style="list-style-type: none"> <li>1. Balanced Occlusion - need and advantages</li> <li>2. Various factors of balanced occlusion</li> </ol>	<p>Must Know 1 hrs</p>
<p><b>Try in Procedures</b></p> <ol style="list-style-type: none"> <li>1. Anterior try - in</li> <li>2. Posterior try - in</li> <li>3. Waxing, carvin, polishing and final try - in</li> </ol>	<p>Must Know 1 hr</p>
<p><b>Processing Procedures</b></p> <ul style="list-style-type: none"> <li>• Flasking</li> <li>• Dewaxing</li> <li>• Packing</li> <li>• Curing</li> <li>• Finishing and polishing of acrylic dentures</li> </ul>	<p>Must Know 1 hr</p>
<p><b>VI.Casting Procedures</b></p> <ul style="list-style-type: none"> <li>• Preparation of die</li> <li>• Wax pattern</li> <li>• Investing</li> <li>• Burnout</li> <li>• Casting</li> <li>• Finishing and polishing</li> </ul>	<p>Desirable to Know 1 hrs</p>

## II BDS

### PRACTICAL EXERCISES 200 hours

1. Arrangement of teeth - Must Know
2. Surveying of partially edentulous models and preparing modified master cast - Desirable to Know
3. Preparing of wax patterns spruing, casting and finishing ( in batches of students not more than 8)  
- Desirable to Know
4. Preparation of plaster models of various preparation of teeth to receive retainers for FPD  
- Desirable to Know
5. Prepare wax patterns for minimum of 3 unit FPD and investing, casting and porcelain facing (for Batch of 8 students) - Desirable to Know

#### Note:

1. Students shall submit one processed denture mounted on an articulator to present on university practical exam along with record book.
2. Exercises of RPD and FPD to be submitted in groups along with the record book.

#### Scheme of Examination

##### A. Practical Exercise: (Duration- 3 hrs) : 60 Marks

Arrangement of teeth in class I relation, Waxing, Carving, Polishing

**B. University Viva-Voce : 20 Marks**

**C. Internal Assessment : 20 Marks**

#### RECOMMENDED TEXT BOOKS

Author	Name of the Book & Title	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Boucher	Prosthodontic Treatment of Edentulous Patients	XI	1997	Mosby St.Louis, Missouri,USA	\$ 76
Heartwell	Syllabus of Complete Denture	IV	1992	Varghese Publishing House	Rs 595
Tylman	Theory and Practice of Fixed Prosthodontics	VIII	1993	Ishiyaku Euro America Inc. 716, Hanley Industrial Court St. Louis Missouri, USA	\$ 69
Mc Cracken	Removable Partial Denture	VIII	1989	CBS Publishers & Distributors Shadara, Delhi	Rs 350
Skinner	Science of Dental Materials	X	1996	W.B Saunders Company, Philadelphia, USA	\$ 35
Craig	Dental Materials, Properties & Manipulation	VI	1996	Mosby St. Louis Missouri,USA	\$ 35

## II BDS PRE-CLINICAL CONSERVATIVE DENTISTRY

**Theory : 25 Hours**

Sl. No.		
1.	Introduction to Conservative Dentistry.	1 hour
2.	Definition, Aim & Scope of Conservative Dentistry & Endodontics	
3.	Classification of Cavities.	1 hour
4.	Nomenclature.	
5.	Various chair side positions.	1 hour
6.	Tooth Numbering.	
7.	Restoration - Definition & Objectives	
8.	Instruments - Classification, Nomenclature, Design, Formula of hand cutting instruments, Care, Grasps and Rests.	4 hours
9.	Rotary Cutting instruments - Burs, Design & use. Various speeds in Cavity preparation.	2 hours
10.	Principles of cavity /Tooth preparation for :	5 hours
	a. Silver Amalgam	
	b. Cast gold inlay	
	c. Composite resins.	
	d. Glass Ionomer	
11.	Matrices, Retainers, Wedges.	2 hours
12.	Separators - different methods of separation.	2 hours
13.	Finishing & polishing of restorations.	1 hours
14.	Management of deep carious lesions - pulp capping and pulpotomy.	3 hours
15.	Access cavity and brief introduction of root canal instruments.	3 hours

### **PRACTICAL EXERCISES - 200 Hours**

Preparation of 1" cube in Plaster of paris - 6 Nos.

Preparation of geometric cavities in the above cubes.

Preparation of Tooth models in plaster and preparation of cavities and restoration with modeling wax.

- a. Incisors - 4 Nos.
- b. Pre-Molars - 2 Nos.
- c. Molars - 8 Nos.

30 Hours

Preparation of Cavities on Typhodont and/or Extracted Natural Teeth

<b>I. CAVITIES</b>	<b>PREPARATION</b>	<b>RESTORATION</b>	
Class I	6 with 2 extensions	4	25 Hours
Class II	5 DO   Conventional 5 MO   5 Conservative	8	25 Hours
	2 MOD (1 Upper molar) (1 Lower Molar)	4 1	15 Hours 15 Hours
	3		
Class III	3 on Anteriors	All	15 Hours
Class V	2 on Posteriors	All	15 Hours
		All	15 Hours

## **II. INLAY PREPARATION :**

Class I1		To prepare Wax patterns	15 Hours
Class II2+1 MOD		To prepare wax patterns and one to be casted	
Class V	1 (posterior)		

## **III. CUSPAL PREPARATION : (Demonstration)**

- IV. a. Pulp capping : Direct/ Indirect on extracted teeth
- b. Pulpotomy on extracted posterior teeth
- c. Root canal access cavity opening on Upper Central incisor.  
(Extracted Tooth)
- V. Demonstration of Light cure composite and Glass Ionomer Restorations.
- VI. Demonstration of Instrumentation and Obturation of root canal.
- VII. Demonstration - Wax pattern, investing, casting, polishing and cementation of cast restoration.

NOTE: The II year student should complete the prescribed quota of work before appearing for final internal assessment for the subject. This should be certified by the Head of the department before the candidate takes up final internal assessment exam.

### **Scheme of Examination**

#### **A. University Practicals : 60 Marks**

##### **Practical Exercise No.1 : 10 Marks**

Spotters : 10 Nos., Marks : 01 Each, Time : 02 Minutes Each

Spotters

- a. Hand instruments used to prepare cavity and restoration
- b. Identification of Root Canal Instruments

##### **Practical Exercise No.2 : 50 Marks**

Preparation of Class II Conventional Cavity for Silver Amalgam in Maxillary or Mandibular I or II Molar tooth (Typhodont/Natural Tooth)

Cavity preparation	45 Minutes	25 Marks
Lining and Matrix	15 Minutes	10 Marks
Filling and carving	30 Minutes	15 Marks

**B. University Viva-Voce : 20 Marks**

**C. Internal Assessment : 20 Marks**

**Total : 100 Marks**

**TEXT BOOKS RECOMMENDED :**

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
The Art & Science of Operative Dentistry	Sturdevant	3rd	1997	Mosby, USA	\$ 30.00
Principle & Practice of Operative Dentistry	Charbeneau	3rd	1989	Varghese Publication, Bombay	Rs. 315/-
Endodontic Practice	Grossman	--	1988	Varghese Publication, Bombay	Rs. 323/-

## II BDS GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS

**Theory : 70 Hrs.**

Sl. No.		
1.	General Pharmacology : a. Definitions : Pharmacology, drug, Pharmacy, sources of drugs with examples.	1 hour
	b. Pharmacokinetics with clinical implications.	2 hours
	c. Routes of administration : oral, inhalation, intradermal, Subcutaneous, intramuscular, intravenous intrathecal, perineural & Newer drug regimes (Advantages and disadvantages with the examples of drugs administered).	1 hour
	d. Pharmacodynamics : mechanism of action, factors modifying drug actions with emphasis on factors like - age, sex, dose, frequency & route of administration, presence of other drugs, Pharmacogenetics and Pathological conditions.	2 hours
	e. Therapeutics : Principles of drug therapy, Adverse drug reactions and drug interactions.	3 hours
2.	ANS drugs : Clinically used examples, their important pharmacological actions (which form the basis for the uses), clinical uses along with dental uses if any and specific adverse effects of - a. Sympathomimetics b. Sympatholytics - alpha blockers, Beta - blockers. c. Cholinomimetics. d. Anticholinergics.	1 hour 2 hours 2 hours 2 hours
3.	Detailed pharmacology of : A. a. Clinically used opiod and non-opiod analgesics. b. Clinically used local anesthetics.	2 hours 2 hours
	B. Enumeration of clinically used agents, their brief Pharmacology, clinical uses along with dental uses if any, and specific adverse effects of : a. Ethyl alcohol - actions, uses and drug interactions.	1 hour
B	. General anesthetics	2 hours
c.	Preanaesthetic medication.	
d.	Antipsychotics, antidepressants, anxiolytics.	2 hours
e.	Sedative hypnotics	2 hours
f.	Antiepileptics	1 hour

4.	CVS drugs : Enumeration/Classification of clinically used agents their important pharmacological actions (that form the basis of their uses) Clinical uses along with dental uses if any, and specific adverse effects of :	
	a. Cardiac glycosides	1 hour
	b. Antianginal drugs	1 hour
	c. Antihypertensives	1 hour
	d. Diuretics	1 hour
	e. Pharmacotherapy of shocks - anaphylactic, cardiogenic hypovolemic & Septic.	1 hour
5.	Drugs acting on blood : Detailed pharmacology of :	
	a. Coagulants, anticoagulants, fibrinolytics, anti platelet drugs and styptics	3 hours
	b. Hematinics : Iron preparation Vit.B12, Folic acid Vit. C	3 hours
	c. Vit.D and calcium preparations.	1 hour
6.	Endocrines : Enumeration/Classification of clinically used agents and their preparations, Mechanism of action, clinical uses along with dental uses if any and specific adverse effects of:	
	a. Drugs used in diabetes mellitus	2 hours
	b. Corticosteroids	2 hours
7.	Chemotherapy : Enumeration/Classification of clinically used Agents, their mechanism of action clinical uses along with Dental uses if any and specific adverse effects of:	
	a. Sulfonamides	1 hour
	b. Beta-lactum antibiotics	2 hours
	c. Macrolides and aminoglycosides	1 hour
	d. Broad spectrum antibiotics	1 hour
	e. Antifungal and antiviral (acyclovir) agents.	2 hours
	f. Metronidazole and fluoroquinolones	1 hour
	g. Antineoplastic Drugs: Alkylating agents, Antimetabolites, Radio active Isotopes, Vinka Alkaloids, Anti Cancerous antibiotics.	2 hours
	h. Drug Therapy of Tuberculosis, Leprosy & Malaria.	3 hours
8.	Other drugs : Enumeration of clinically used agents, general uses along with dental uses if any and specific adverse effects of :	
	a. Antihistamines and antiemetics	2 hours
	b. Drugs used in bronchial asthma and cough	1 hour
	c. Drugs used in peptic ulcer	2 hours
	d. Chelating agents - BAL, EDTA & Penicillamine.	1 hour
	e. Anthelmintics	2 hours

9.	Dental Pharmacology	1 hour
	A. a. Fluoride pharmacology	1 hour
	b. Antiseptics, astringents & Sialogogues	1 hour
	c. Obtundents, Mummifying agents and disclosing agents.	2 hours
	B. Prevention and drug therapy of emergencies in dental practice.	
	a. Seizures	
	b. Anaphylaxis	
	c. Severe bleeding	
	d. Shock	
	e. Tetany	
	f. Status asthmaticus	
	g. Acute Addisonian crisis	
	h. Diabetic Ketoacidosis	

**PRACTICALS : 20 Hrs.**

1.	Introduction - equipments used in dispensing pharmacy, prescription - parts and model prescription.	2 hours
2.	Demonstration of common dosage forms used in clinical practice.	2 hours
3.	Mixtures - one example (Expectorant/Salicylate) of simple and diffusible (Bismuth Kaolin/chalk) mixtures.	2 hours
4.	Emulsion - Types and example (Liniment turpentine / Shark liver oil) of emulsion.	2 hours
5.	Powders - tooth powder	2 hours
6.	Mandl's paint/Gum paint percentage dilution - concept and calculations with suitable examples.	2 hours
7.	Mouth washes - Alkaline, antiseptic, astringent.	2 hours
8.	Tooth pastes	2 hours
9.	Prescription writing for 15 general conditions commonly encountered in clinical practice. eg. Bronchial asthma, hypertension congestive heart failure, angina pectoris, peptic ulcer, bacillary dysentery, pseudomembranous colitis, diabetes mellitus, diabetic coma, osteoarthritis, anaphylaxis, status asthmaticus, Status epilepticus, iron deficiency & pernicious anaemia.	2 hours
10.	Dental prescriptions for about fifteen dental conditions commonly encountered in practice eg. Acute necrotising ulcerative gingivitis, acute herpetic gingivitis/stomatitis, acute gingival abscess, pericoronal abscess (impacted teeth), dental caries, aphthous ulcers, hypersensitive dentine, dentoalveolar abscess, xerostomia, acute tooth ache, post operative pain, post extraction pain with swelling, oral candidiasis, scurvy etc.	2 hours

## Scheme of Examination

### A. Theory (Written) Examination : 70 Marks

Type of questions, topics and marks distribution

Contents	Type of Questions and Marks	Marks
<p><b>Topics to be covered :</b></p> <p>One long essay from dental pharmacology</p> <p>Second long essay from:</p> <ul style="list-style-type: none"> <li>- Pharmacokinetics</li> <li>- Pharmacodynamics</li> <li>- Antibiotics</li> <li>- NSAIDs</li> <li>- Local anesthetics</li> <li>- Anti coagulants</li> <li>- Beta blockers</li> <li>- Glucocorticoids</li> <li>- Calcium channel blockers</li> <li>- ACE Inhibitors</li> <li>- Opioid Analgesics</li> <li>- Sympathomimetics</li> <li>- Anti-Cholinergics</li> <li>- Cardiac Glycosides</li> </ul>	<p>Long Essay 2 x 10 = 20 marks</p>	20
<p><b>For Short notes</b> Please refer chapters at sl. no. 1, 1 b, c, d, e, 2 b, 3 B, 4 b, d, e., 5, 6 a, 7 e, f, g., 8, 9. A. b, c, 9. B.</p> <p><b>Compare and contrast type from</b></p> <ul style="list-style-type: none"> <li>- Physostigmine and Neostigmine</li> <li>- Atropine and Scopolamine</li> <li>- Procaine and Cocaine</li> <li>- Heparin and Dicoumoral</li> <li>- Iron Dextran and Iron Sorbitol Citric Acid complex</li> <li>- Digoxin and Digitoxin</li> <li>- Frusemide and Spiranolactone / Triamterene</li> </ul>	<p>Short essay type</p> <p>Short notes 06 x 5 = 30 marks</p> <p>Compare and contrast 02 x 5 = 10 marks</p>	40
<p>To classify the drug and write its mechanism of action or adverse effect or clinical use or specific antidote indicated in its poisoning, if any.</p>	<p>Short Answer type 05x 02= 10 marks</p>	10
	<b>TOTAL</b>	<b>70</b>

**B. Viva Voce : 20 Marks**

**C. Internal Assessment - Theory : 10 marks, Practicals : 10 marks**

**D. Practicals : 90 Marks**

1. Spotters 10 nos. x 1 = 10 marks

2. Prescriptions 2 nos. (10+10 marks) = 20 marks  
(one medical plus one dental prescription)

3. Preparations 2 nos. x 30 marks = 60 marks  
(one medical plus one dental preparation)

**TEXT BOOKS RECOMMENDED :**

Name of the Book & Title	Author	Edn	Yr. of Publ	Publ.'s Name Place of Publ.	Price
R.S.Satoskar and S.D.Bhandarkar	Pharmacology & Pharmaco therapeutics	21st	2009	Bombay Popular Prakashan	Rs. 605/-
Tripathi K.D.	Essentials of Medical Pharmacology	6th	2008	New Delhi Jaypee Brothers Medical Publishers	Rs. 795/-
Tripathi K.D.	Essentials of Medical Pharmacology	1st	2006	.....do.....	Rs. 395/-
P N Bennett M J Brown	Clinical Pharmacology	9th	2003	New York Churchill Livingston	\$ 11.00
Kartzung Betram G	Basic and clinical Pharmacology	11th	2007	USA Lange Medical Books	Rs. 3024/-
H L Sharma K K Sharma D K Gupta	Text book of Dental Pharmacology	1st	2008	Hyderabad, New Delhi Paras Medical Publishers	Rs. 695/-
Padmaja Udaykumar	Medical Pharmacology	IIIrd		Publishers & Distributors Pvt Ltd	

## II - BDS GENERAL PATHOLOGY

Theory : 55 Hours

	Hours
1. Introduction to pathology as scientific study of disease, evolution of modern pathology, subdivisions in pathology, techniques used in the study of pathology and terms used in pathology	02
2. Disturbances of metabolism of cells-Intra cellular accumulations (Degenerations) Fatty change, accumulation of lipids, proteins and glycogen. cellular swelling, hydropic change, Hyaline change and mucoid degeneration. Disorders of pigmentation and pathologic calcification.	03
3. Cell injury- Causes Types, mechanism, intracellular changes, morphology with examples, Cell death. Necrosis - definitions, types of necrosis with examples and cellular changes (morphology), mechanism. Apoptosis - definition, examples, morphology Gangrene- definition, types with examples, differences between dry and wet gangrene, stressing mainly on cancrum oris.	05
4. Amyloidosis - definition, pathogenesis and emphasis on localised amyloidosis, special stains for amyloidosis.	02
5. Inflammation and Repair-Acute and chronic inflammation. Chemical mediators of acute inflammation, Outcome of acute inflammation. Granulomatous inflammation - definition of granuloma, Types of granuloma, with examples. Patterns and systemic effects of inflammation.	05
6. Healing of a wound in general with special emphasis on healing of a fracture. Factors affecting wound healing.	03
7. Immunity and hypersensitivity, definition, types mechanisms of immunology tissue injury with examples. Brief Introduction to Auto-Immune diseases.	06

8. Infection and infestation - Bacterial- like pyogenic infections, typhoid fever, viral like AIDS, Hepatotropic viruses. Tuberculosis, Leprosy&syphilis, Actinomycosis. Viral- Hiv, Hepatotropic Viruses, Htlv. Fungal- Candidiasis, Mucormycosis.	08
9. Circulatory disturbances - Hyperaemia, congestion, Haemorrhage shock, oedema, thrombosis, embolism and infarction.	08
10. Disturbances of Nutrition; Starvation, Obesity, Malnutrition, Pathogenesis of Deficiency Diseases with Special Reference to Disorders of Vitamins & Minerals	05
11. Diabetes mellitus types, Aetio Pathogenesis, morphological changes in different organs, complications and lab investigations.	02
12. Brief Introduction to Growth and Differention. Adoptive Disorders of Growth-Arophy, Hypertrophy Hyperplasia, Metaplasia. Types and Pathologic Changes Of Dysplasia And Premalignant Lesions.	03
13. Neoplasia : Introduction, Definition, Classification, Characteristics of Benign and Malignant Tumours. Routes of Spread of Malignant Tumours, Aetiology, Epidemiology and Pathogenesis of Neoplasia, Oncogenes, Clinical Aspects & Laboratory Diagnosis of Cancer.	08
14. Common Diseases of Bone - Osteomyelitis, Tumours and Tumours Like Lesions of Bone.	04
15. Introduction to Diseases of Oral Cavity & Salivary Glands- inflammatory Conditions, Infections, Premalignant Conditions and Squamous Cell Carcinoma of Oral Cavity Sialadenitis, Pleomorphic Adenoma and Warthin's Tumour. (exclude Diseases of Teeth, Periodontal Diseases and Odontogenic Tumours)	04
<b>Haematology and Clinical Pathology</b>	
1. Introduction to Haematology-brief Introduction to Haemopoiesis, Bone Marrow Aspiration & Biopsy.	02
2. Diseases of RBCS-Anaemias -classification, Iron Deficiency Anemia, Vit.b12 Or Folic Acid Deficiency Anaemia and Haemolytic Anaemias and Their Lab Investigations. Polycythaemia	07

3. Diseases of WBCS- Pathologic Variations in white cell counts and Leukemoid Reactions.	02
4. Neoplastic Proliferation of Leucocytes - Leukaemias - Acute & Chronic Leukaemias with Brief Introduction to Lymphomas.	05
5. Haemorrhagic Disorders with their Lab Investigations.	02

**PRACTICALS AND LECTURE DEMONSTRATIONS : 50 hours**

Lecture Demonstrations -----10 Hours

1. Anti Coagulants, Blood Indices
2. Pcv And Erythrocyte Sedimentation Rate
3. Instruments & Their Uses :
  - A. Neubauer's Counting Chamber.
  - B. Haemoglobinometer
  - C. W.b.c.pipette
  - D. Wintrobe Tube
  - E. Urinometer.
4. Cytologic Techniques - Fnac And Buccal Smear
5. Study Of Anaemias - Microcytic, Macrocytic And Dimorphic Blood Picture.
6. Study Of Acute Leukemias- Any One Type
7. Study Of Chronic Leukemias-any One Type.

**Histopathology Slides And Specimens -----20 Hours**

1. Acute Appendicitis
2. Granulation Tissue.
3. Actinomycosis
4. Tubercular Lymphadenitis
5. Fatty Liver.
6. Chronic Venous Congestion (cvc) Liver / Spleen / Lung.
7. Squamous Papilloma / Transitional Cell Papilloma
8. Pleomorphic Adenoma
9. Capillary And Cavernous Haemangioma
11. Fibroma,
12. Lipoma
13. Osteoma, Chondroma
14. Squamous Cell Carcinoma
15. Basal Cell Carcinoma
16. Adenocarcinoma,
17. Malignant Melanoma.
18. Osteosarcoma
19. Osteoclastoma.

### Specimens

1. Acute Appendicitis.
2. Tuberculosis Lymph Node /any Other Organ
3. Fatty Liver.
4. Infarction Spleen.
5. Chronic Venous Congestion (c.v.c.) Liv
6. Lipoma /any Other Benign Tumours
7. Carcinoma-breast /any Other Malignant Tumour
7. Adenocarcinoma
8. Osteosarcoma
9. Osteoclastoma.
10. Gangrene.

### Practicals That Must Be Done By Students : 20 Hours

- Determination Of Haemoglobin Percentage
- Blood Grouping.
- Total Leukocyte Count
- Bleeding Time, Clotting Time
- Peripheral Blood Smear - Staining & Study
- Differential Leukocyte Count.
- Urine Examination - For Sugar, Ketone Bodies, Protein, Blood, Bile Pigments And Bile Salts - Any One Standard Test.

### Scheme of Examination

To Conduct General Pathology and Microbiology Exams on Separate Days.

#### A. Theory : 45 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
<b>One Main Question from General Pathology</b> Inflammation, Healing and Repair, Tuberculosis, Leprosy, Thrombosis, Diabetes Mellitus, Neoplasia. Anaemias Due to Nutritional Deficiency, Amyloidosis, Cell Injury and Cell Death	Long Essays 1 x 10 marks	10
<b>Three from General Pathology</b> <b>One from Haematology</b> <b>One from Clinical Pathology</b> Intracellular Accumulations, Necrosis, Gangrene, Apoptosis, Amyloidosis, Pathologic Calcification, Hypersensitivity Reactions, Infections, Shock, Oedema, Infarction, Congestion, Hypertension, Diabetes Mellitus,	Short Essays 3 x 5 marks	15

Contents	Type of Questions and Marks	Marks
Premalignant Conditions, Neoplasia, Osteomyelitis, Anaemias, Neoplastic Proliferation of Wbcs - Leukaemias and Lymphomas, Haemorrhagic Disorders, Erythrocyte Sedimentation Rate (Esr).		
<b>2 From Haematology</b> <b>1 From Clinical Pathology</b> <b>2 From General Pathology</b>	Short Answers 5 x 2 marks	10
	<b>Total</b>	<b>45</b>

**B. Viva Voce : 10 Marks**

**C. Internal Assessment - Theory : 05 Marks, Practical : 05 Marks**

**D. Practicals : 55 Marks**

1. Spotters : 1.5 Marks for each Spotter

Instruments	-	2
Haematology slide	-	1
Specimens	-	2
Histopathology slides	-	5
		<u>15 Marks</u>

2. To examine given sample of urine for abnormal constituents - 15 Marks

3. To do differential count on the given peripheral blood smear - 15 Marks

4. To estimate haemoglobin percentage in the given sample of blood

or

To determine blood groups (abo and rh) in the given sample of blood - 10 marks

**Text Books Recommended :**

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Robbin's pathologic basis of disease	Cotran & Kumar, Robins	7th	2003	Prism & Saunders Bangalore	
De.Gruchy Clinical Haematology in Medical Practice	Frank Firskin Colin Chesterman David Penington Bryan Rush	5th	2003	Oxford University Press New Delhi	
Pathology for dental students	Harsh Mohan	recent	2003	--	
Medical Laboratory Technology (Methods and Interpretation)	Dr. Ramnik Sood	5th	1994	Jaypee Brothers New Delhi	Rs. 250/-

**Reference Books**

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Clinical Diagnosis and Management by Laboratory Methods	Todd, Sanford, John Bernard Davidson	20th	2001	Veerendar Kumar Arya for AITBS with Saunders New Delhi	Rs.1250/-
Haematology an illustrated colour text	Martin R. Howard Peter J Hamilton	1st	1997	Churchill Livingston USA	£ 4.95
General Pathology Vol. I & II	Y.M. Bhende & S.G. Deodhare	5th edn. Under print		Popular Prakashan Bombay	
Colour Atlas of Histopathology	R. C. Curran	4th (Revised)	2000	Harvey Miller Oxford university press	Rs. 1250/-

## II - BDS MICROBIOLOGY

Theory: 63 Hrs.

		Teaching Hours
	<b>GENERAL BACTERIOLOGY</b>	
1.	Introduction, History and classification.	02
2.	Morphology, Physiology of Bacterial cell.	02
3.	Bacterial Genetics	02
4.	Infection	02
	<b>IMMUNOLOGY</b>	
1.	Immunity	02
2.	Antigen	01
3.	Antibodies	01
4.	Structures and functions of Immune system	01
5.	Immune response	01
6.	Antigen and antibody reactions & compliment	04
7.	Hypersensitivity	02
8.	Auto immunity	01
9.	Immunology of transplantation	01
	<b>SYSTEMATIC BACTERIOLOGY</b>	
1.	Staphylococci	01
2.	Streptococci (Dental Caries)	02
3.	Pneumococci	01
4.	Meningococci & Gonococci	01
5.	Coryne bacterium diphtheriae	02
6.	Bacillus	01
7.	Clostridia	02
8.	Non sporing Anaerobes	02
9.	Mycobacteria	03
10.	Spirochaetes (Treponema, Leptospira and Borrelia)	03
11.	Normal Bacterial flora of the oral cavity	01
	<b>VIROLOGY</b>	
1.	General properties of viruses	03
2.	Herpes viruses	02
3.	Measles and Mumps	01

4.	Rabies virus.	01
5.	Hepatitis viruses	02
6.	Human Immuno deficiency Virus (HIV)	01
7.	Adeno oncogenic viruses.	02
	<b>PARASITOLOGY</b>	
1.	Introduction to parasitic diseases	01
2.	Entamoeba histolytica, E. Gingivalis Malaria, Leishmania	03
	<b>MYCOLOGY</b>	
1.	Candidiasis (in detail)	02
2.	Rhinosporidiosis	02
	<b>APPLIED MICROBIOLOGY</b>	
1.	Immunisation schedule, Collection of materials, Experimental animals & hospital infections - In Brief	02

#### **MUST KNOW - MANDATORY TO KNOW**

##### **I GENERAL BACTERIOLOGY**

1. Morphology - Structure, appendages, demonstration.
2. Physiology - Nutritional requirement, growth curve.
3. Bacterial genetics - Mechanism of genetic transfer, drug resistance.
4. Infection- definition, bacterial factors, Host factors, types of infection, carrier, septicaemia, bacteraemia, pyemia, toxemia, epidemic, endemic, pandemic, nosocomial infection.

##### **II. IMMUNOLOGY**

1. Immunity - Definition, classification, factors, mechanisms examples
2. Antigens - definition, types and properties.
3. Antibodies - structure, functions of diff. types of Immuno globulins.
4. Immune system - structure, function of T cells, B cells, differences.
5. Immune response - factors responsible for immune variations, adjuvants, mechanism.
6. Antigen - Antibody reactions - definition, mechanism, examples, clinical applications of AG-AB reactions like agglutination, precipitation, Complement Fixation Test (CFT), Neutralisation, Fluorescent Immune test, Opsonisation , ELISA test etc.
7. Hypersensitivity - definition, classification, mechanisms.
8. Autoimmunity - Theories, definition, classification, mechanisms.

##### **III. SYSTEMATIC BACTERIOLOGY**

1. Staphylococci - Classification, morphology, pathogenesis, pathogenicity tests, lesions, lab diagnosis and treatment.
2. Streptococci - Classification, morphology, cultural characters, Pathogenesis, lab diagnosis, sequelae, Dental plaque, Dental caries & its diagnosis.
3. Pneumococci - Morphology, cultural characters, diff. between pneumococci and streptococci, pathogenicity and lab diagnosis.
4. Meningococci - Causes of bacterial meningitis, Morphology, lab diagnosis of bacterial meningitis including meningococcal meningitis.

5. Corynebacterium - diphtheriae - Morphology, cultural characters toxigenicity, its occurrence, spread, lab diagnosis, prophylaxis.
6. Bacillus species - Morphology, lesions and lab diagnosis.
7. Clostridia - Classification, pathogenesis, lab diagnosis of gas gangrene tetanus, prophylaxis and clinical features.
8. Nansporing anaerobes - Classification, pathogenesis, lesions, Lab diagnosis in respect to dental infections.
9. Mycobacteria - Mycobacterium leprae, Mycobacterium tuberculosis, Atypical mycobacteria, Morphology, classification, cultural characters, pathogenesis, lab diagnosis, susceptibility test and prophylaxis.
10. Actinomycosis - Morphology, lesions in respect to orofacial lesions, lab diagnosis
11. Spirochaets - classification, morphology, pathogenesis & lab diagnosis of Treponema, Borrelia, Leptospira.
12. Normal Bacterial flora of the oral cavity - Enumerating the organisms opportunistic importance in dental practice.

#### **IV. VIROLOGY**

1. General virology - general properties, definition, classification, structure, pathogenesis, cultivation, lab diagnosis, antiviral agents immunology.
2. Herpes viruses - structure, classifications, lesions and lab diagnosis HSV 1, 2, EBV CMV, Virus Zoster (VZ) virus
3. Measles & Mumps viruses - structure, lesions, prophylaxis and lab diagnosis.
4. Hepatitis viruses - ABCDE; structure, route of entry, lesions, lab diagnosis and prophylaxis.
5. HIV - classification, structure, pathogenesis, route of entry opportunistic infection in AIDS, lab diagnosis - prophylaxis

#### **V. MYCOLOGY**

1. Candida - Morphology, lesions, lab diagnosis, diff. Species in relation to oral candidiasis
2. Rhinosporidiosis

#### **VI. PARASITOLOGY**

Introduction to parasitology - classification, general diseases caused by them.

Entamoeba, Malaria, Leishmania - Morphology, Clinical features, pathogenesis and lab diagnosis.

DESIRABLE TO KNOW (Theory questions need not be asked from this list)

#### **I. GENERAL BACTERIOLOGY :**

1. Introduction
2. Historical aspects

#### **II. IMMUNOLOGY :**

1. Complement - properties and functions.
2. Immuno deficiency diseases, enumerating the diseases
3. Immunology of transplantation, classification and brief description of transplantation.

### III. BACTERIOLOGY :

1. Gonococci - Morphology, lesions, lab diagnosis.
2. Coliforms - Classification, pathogenesis, infections caused by them and lab diagnosis.
3. Proteus - Classification, pathogenesis, infections caused by them and lab diagnosis.
4. Salmonella - pathogenesis, lab diagnosis, prophylaxis.
5. Shigella - classification, pathogenesis, lab diagnosis
6. Vibrio - pathogenesis & lab diagnosis
7. Pseudomonas - Importance in hospital infection and drug resistance.

### IV. VIROLOGY :

1. Adeno & oncogenic viruses.
2. Rabies viruses- structure, pathogenesis, clinical feature, lab diagnosis, prophylaxis.
3. Poliomyelitis - Pathogenesis, clinical feature, lab diagnosis, prophylaxis.

### V. PARASITOLOGY:

1. Important Helminthic parasites.

### VI . APPLIED MICROBIOLOGY :

1. Immunisation schedule - prophylaxis
2. Collection of materials - for lab diagnosis
3. Experimental animals - Uses of animals in dentistry

### PRACTICALS & PRACTICAL DEMONSTRATIONS : 50 Hours MUST KNOW :

#### PRACTICAL DEMONSTRATIONS

- |   |            |
|---|------------|
| 1. Sterilisation and disinfection in detail   | 06x02 = 12 |
| 2. Culture media                              | 03x02 = 06 |
| 3. Cultural methods & Anaerobic methods       | 02x02 = 04 |
| 4. Identification of bacteria & demonstration | 02x02 = 04 |
| 5. Microscopy                                 | 02x02 = 04 |

#### PRACTICALS

- |  |               |
|--|---------------|
| 6. Simple stain and hanging drop<br>(Not form exams) | 01x02 = 02    |
| 7. Grams stain                                       |               |
| 8. Alberts stain                                     | 03x02 = 06    |
| 9. Ziehl Neilsen's stain                             | 03x02 = 06    |
|  | 03x02 = 06    |
|  | -----         |
|  | Total Hrs. 50 |
|  | -----         |

Sterilization - definition, classification, methods, physical, filtration, radiation, chemicals - used in dental practice, hospital practice.

Culture media - Classification, uses.

Culture methods - Inoculation methods, antibiotic sensitivity, Anaerobic culture techniques.

Microscopy - maintenance, uses, different parts, different types.

#### **LIST OF PRACTICAL MATERIALS**

##### **SLIDES FOR DEMONSTRATION :**

1. Staphylococcus
2. Streptococcus
3. Gonococcus
4. Pneumococcus
5. M Tuberculosis
6. M Leprae
7. Anthrax
8. Cl. Tetani
9. Spirochaetes
10. Gram Negative Bacilli
11. Candida
12. (Actinomyces)

##### **SLIDES FOR PRACTICAL EXERCISES :**

Grams stain -Staphylococci

- Gram negative bacilli
- Mixture of any two organisms
- Gram stain of the oral cavity.

Alberts stain - Kleb's Loeffler's Bacilli (KLB) culture slide

Ziehl-Neelson's stain - Sputum positive for AFB

##### **MEDIA FOR DEMONSTRATION :**

##### **UNINOCULATED MEDIA :**

1. Nutrient agar plate
2. Blood agar plate
3. Chocolate agar plate
4. Macconkey agar plate
5. Glucose citrate broth (Blood culture bottle)
6. Lowenstein Johnson's Media slope
7. Loefflers serum slope
8. Sabourauds slope
9. Robert Cooked Meat broth

**INOCULATED MEDIA :**

1. Nutrient agar with staphylococci
2. Blood Agar with Alpha Haemolytic Streptococci.
3. Blood Agar with Beta Haemolytic Streptococci.
4. Potassium Tellurite with growth of C.diphtheriae
5. Milk agar with staphylococci
6. Antibiotics sensitivity plate

**INSTRUMENTS :**

1. VDRL slide
2. Tuberculin syringe
3. Sterile swab
4. Seitz filter
5. Macintosh filds jar
6. Widal rack with tubes
7. Microtitre plate
8. Disposable syringe
9. Surgical gloves

**Scheme of Examination****A. Theory : 35 Marks**

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
One Long Essay question from Systematic Bacteriology	Long Essays 1 x 10 marks	10
One question from General bacteriology One question from Immunology One question from Mycology One question from Parasitology / Oral Microbiology One question from Systematic Bacteriology	Short Essays 3 x 5 marks	15
One question from General bacteriology One question from Immunology One question from Systematic Bacteriology Two questions from Virology	Short Answers 5 x 2 marks	10
	<b>Total</b>	<b>35</b>



### Reference Books

Name of the Book & Title	Author	Edn. and Yr. of Publication	Publisher's Name and Place of Publication	Price
Bacteriology for Dental Students	T.H. Merville and G.L. Slack	--	Medical Book Ltd. London	--
Bacteriology for students of Dental Surgery	R.B. Lucas and Ivor R.H. Kramer	--	Calcutta	--
Oral Microbiology and Infectious Diseases	Burnett and Scherp	--	Oxford Book Company Calcutta	--
Immunology	Donald M Weir	7th 1993	Longman Singapore Pub. Lt. Singapore	£ 2.50
Medical Parasitology	N. C. Dey and T.K.Dey	10th 1997	New Central Book Agency Pvt.Ltd. Calcutta	Rs. 150/-
Notes on Medical Virology	Morag C. Timbury	--	--	£ 5.00
Manual of Clinical Mycology	Conant and Smith	--	--	--

## II BDS

# ORAL PATHOLOGY AND MICROBIOLOGY

Theory : 25 Hours  
Practical : 50 Hours

### MUST KNOW

1. Developmental Disturbances of oral and para oral structures :(15 hrs)
  - a. Developmental disturbances of Jaws
    - Agnathia, Micrognathia, Macrognathia, Facial Hemihypertrophy, Facial Hemiatropy
  - b. Developmental Disturbances of lips and palate
    - Congenital Lip pits and Commissural pits and fistulas
    - Double lip, Cleft lip, cleft Palate, Chelitis Glandularis, Chelitis Granulomatosa, Hereditary Intestinal Polyposis, Hereditary Melanotic Macule
  - c. Developmental disturbances of Oral Mucosa
    - Fordyce's Granules
    - Focal epithelial Hyperplasia
  - d. Developmental disturbances of gingiva
    - Fibromatosis Gingiva, Retrocuspid Papilla
  - e. Developmental Disturbances of Tongue
    - Macroglossia, Microglossia, Ankyloglossia, Cleft Tongue, Fissured Tongue, Median Rhomboid Glossitis, Benign Migratory Glossitis, Hairy Tongue.
    - Aglossia, macroglossia, Microglossia, Ankyloglossia, Cleft Tongue, Fissured Tongue, Median Rhomboid Glossitis, Benign Migratory Glossitis, Hairy Tongue, lingual Varices, lingual Thyroid Nodule
  - f. Development disturbances of oral lymphoid tissue:
    - Reactive lymphoid aggregates
    - Lymphoid hamartoma
    - Lympho-epithelial cyst
  - g. Developmental disturbances of salivary glands:
    - Aplasia, Xerostomia, Hyperplasia of the palatal glands, Atresia, Aberrancy, Stafine's cyst Anterior Lingual Depression
  - h. Developmental disturbances in size of teeth:
    - Microdontia, Macrodontia
  - i. Developmental disturbances in the shape of the teeth:
    - Fusion, Germination, Concrescence, Dilacerations, Talon's Cusp, Dens in Dente, Dens Evaginatus, Taurodontism, Supernumerary Roots, Enamel Pearl
  - j. Developmental Disturbances in number of teeth
    - Anodontia, Supernumerary teeth, Predeciduous and Post Permanent dentition
  - k. Developmental Disturbances in Structure of Teeth:
    - Amelogenesis Imperfecta, Enamel Hypoplasia, Dentinogenesis Imperfecta, Dentinal dysplasia, Regional Odontodysplasia, Shell Teeth.
  - l. Developmental Disturbances in eruption of teeth:
    - Premature Eruptions, Eruption Sequestrum, Delayed Eruption, Multiple Unerupted teeth, Submerged Teeth. Embedded and Impacted Teeth

- m. Developmental / Fissural cysts of the Oral cavity  
 - Median palatal cyst, Globulomaxillary cyst, Median Mandibular cyst, Naso-alveolar cyst, Palatal cyst of neonates, Thyroglossal duct cyst, Epidermoid, and Dermoid cyst, Nasopalatine duct cyst.

**2. Dental Caries (5 hrs)**

- Theories and Etiology
- Clinical features
- Classification
- Histopathology
- Immunology
- Caries activity Tests
- Factors Influencing Caries

**3. Diseases of the pulp and Periapical tissues(5 hrs) (5 hrs)**

- a. Diseases of the Dental Pulp  
 - Focal Reversible Pulpitis, Acute Pulpitis, Chronic Pulpitis, Chronic Hyperplastic Pulpitis.
- b. Diseases of the Periapical Tissues  
 - Acute Apical Periodontitis, Periapical Granuloma, Periapical Abscess, Periapical Cyst
- c. Osteomyelitis  
 - Acute Suppurative Osteomyelitis, Chronic Suppurative Osteomyelitis, chronic Focal And Diffuse Sclerosing Osteomyelitis, Chronic Osteomyelitis With Proliferative Periostitis

**Practicals : 50 hours**

Identification of Hard and Soft Tissue Specimens

**Text Books Recommended :**

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication	Price
Shafer's Text Book of Oral Pathology	R. Rajendran & BShivapathasu-ndaram	6th	2009	Elsevier	Rs. 876/-
Oral Pathology Clinical Pathologic Correlation	Regezi & Scuiba	5th	2007	W. B. Saunders Company USA	\$ 25
Textbook of Oral and Maxillofacial Pathology	Neville, Damm. Allen, Bouquot	3rd	2009	Elsevier	-
Oral Diseases in The Tropics	Prabu, Wilson, Duftry, Johnson	1st	1992	Oxford University Press	Rs. 400/-

**Other suggested reading**

1. Pathology of Tumors-Lucas
2. Oral Immunology - Lehner
3. Oral Pathology - Soames and Southam
4. Contemporary Oral and Maxillofacial Pathology - SAPP Eversole, Wysocki,
5. Colour Atlas of Oral Pathology - John Everson And Crispian Scully

### III BDS

## GENERAL MEDICINE

Special emphasis should be given throughout on the importance of various diseases as applicable to dentistry e.g.: indications and contraindications for anesthesia in oral and dental procedures in different diseases. A dental student should be taught in such a manner that he is able to record the pulse, blood pressure and be capable of suspecting by sight and superficial examination of the body, diseases of the heart, lungs, kidneys, blood etc. He should be capable of handling medical emergencies encountered in dental practice. Too much details and treatment aspect (therapeutics) should be avoided.

**Theory : 60 Hours (Medicine - 52 Hours, Psychology - 8 hours )**

Must know	Desirable to know	Hours
1. Aims of Medicine, definition of diagnosis, treatment & prognosis. History taking, physical examination of the patient, diagnosis and management of disease.	Genetics and disease Medical Ethics	2 Hours
2. Infections: Enteric fever, HIV, Herpes simplex, Herpes zoster, Syphilis, Diphtheria, Malaria, Actinomycosis, Viral hepatitis, Tuberculosis.	Infectious mononucleosis, Mumps, Measles , R u b e l l a , L e p t o s y , Organisation and functions of the immune systems.	5 Hours
3. GIT: Stomatitis, Gingival hyperplasia, Dysphagia, Acid peptic disease, Jaundice, Acute and chronic hepatitis, Cirrhosis of liver, Ascitis, Amoebiasis, Tender hepatomegaly, Hepatotoxic drugs, Portal hypertension.	Diarrhoea and dysentery including Malabsorption syndromes, Helicobacter pylori	5 Hours
4.C.V.S: Acute rheumatic fever, Valvular heart disease, Hypertension, Ischemic heart disease (myocardial infarction), Infective Endocarditis, Common arrhythmias, Classification of congenital heart disease	Heart failure, Fallot's tetralogy, ASD, VSD.	7 Hours
5. Respiratory system: Applied anatomy and physiology of RS, Pneumonia, COPD, Pulmonary Tuberculosis, Bronchial asthma, Pleural effusion, Acute respiratory tract infections, Pulmonary embolism, Suppurative lung diseases, Lung abscess,	Bronchiectasis, Lung cancer. Empyema, Sleep apnea, ARDS, Respiratory failure	5 Hours
6. Hematology: Hematopoiesis, Anaemias, Clotting and Bleeding disorders, Acute and chronic myeloid leukemias, Agranulocytosis &	Principles of blood and blood products transfusion, Thromboembolic disease,	7 Hours

Neutropenia, Thrombocytopenia, Splenomegaly Lymphomas, or a manifestations of haematological disorders.	Oncogenesis, Hemolytic anemia, DIC, (disseminated intravascular coagulation)	
7. Renal System: Acute Nephritis & Nephrotic syndrome, U.T.I	Renal function tests, CRF	4 Hours
8. Nutrition: Balanced diet, PEM, Vitamin deficiency disease, Calcium and phosphate metabolism. Fluorosis	Osteomalacia, Osteoporosis	4 Hours
9. C N S: Facial Palsy, Facial pain, Trigeminal neuralgia, Epilepsy, Headache including migraine	Meningitis (acute and chronic), Anticonvulsants	5 Hours
10. Endocrine: Diabetes Mellitus, Acromegaly, Hypothyroidism,	Addison's disease, Cushing's syndrome, Parathyroid disease and calcium metabolism Preoperative assessment of diabetic patients, Acute adrenal deficiency	5 Hours
11. Critical care medicine: Syncope, Cardiac Pulmonary Resuscitation (CPR), Anaphylaxis, Allergy, Angio-neurotic edema.	Acute LVF, ARDS, Cardiogenic Shock, Coma	3 Hours
Miscellaneous: Adverse drug reactions, Drug interactions	Rheumatoid disease, Osteoarthritis Scleroderma	

## Psychology / Psychiatry

Must know	Desirable to know	Hours
1. Introduction to behavioural sciences: Definition Over lapping of social, behavioural and biological sciences	Holistic approach to medical care	2 Hours
2. Pain: Behavioural, emotional, autonomic, conscious and unconscious, components of pain Role of anxiety in worsening pain (vicious circle)		5 Hours
3. Interview technique: Doctor-patient relation, listening and questioning.  Pre and post treatment counselling, probing Of the fears, anxiety and anger, guilt in cases Of extraction, surgery, HIV, cancer etc.		5 Hours
4. Psychiatric disorders: Classification of mental illnesses. Aetiology - Biopsychological aspects.	Psychosis psychosomatic illnesses, alcoholism and drug dependence, dementia, illness behaviour, socio-cultural aspects stressing on personalities (anxiusus, obsessive)	7 Hours
5. Neurotic disorders and psychosomatic: Definition, classification, aetiology, clinical manifestations (anxiety, depression, phobia, somatoform disorders, conversion reaction, adjustment reaction), stress, coping, alexithymia.	Management - Stress	5 Hours
6. Liaison psychiatry: Dental care in mental retardation, dementia, Schizophrenia Eating disorders - deficiencies. Psychotropic drugs- side effects and drug interactions.		7 Hours

### Clinical : 90 Hours (posting in a general hospital)

1. Five complete cases must be written in a record book before the student takes the final examination.
2. The student must be able to take history, do general physical examination (including build, nourishment, pulse, BP temperature, edema, cyanosis, clubbing, jaundice, lymphadenopathy, oral cavity) and be able to examine cardiovascular and respiratory systems, abdomen and the facial nerve and signs of meningeal irritation.

## Scheme of Examination

### A. Theory : 100 Marks

Distribution of Topics and Type of Questions:

Contents	Type of Questions and Marks	Marks
From Must Know topics only (sl. no. 1 to 11 under Theory)	Long Essays 2 x 10 marks	20
From Must Know topics only (sl. no. 1 to 11 under Theory) And Psychology/Psychiatry	Short Essays 10 x 5 marks	50
From Must Know topics only (sl. no. 1 to 11 under Theory)	Short Answers 10 x 3 marks	30
	<b>Total</b>	<b>100</b>

### B. Viva Voce : 25 Marks

### C. Internal Assessment - Theory : 25 marks, Practicals : 25 marks

### D. Clinicals : 75 Marks

i. Case History	:	10 marks
ii. Clinical Examination	:	30 marks
iii. Investigation	:	10 marks
iv. Diagnosis & D. D.	:	10 marks
v. Management	:	05 marks

### Textbooks recommended:

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication	Price
Davidson's Principles of Practice of Medicine	Edward Christopher	18th	1991	Churchill Livingstone UK	Rs. 1168/-
Hutchison's Clinical Practice	Swash Michael	21st	2001	Churchill Livingstone UK	Rs. 595/-
Principles of Internal Medicine (for further reading)	Harrison	15th	2001	Mc. Graw Hill US	Rs. 1895/-
API Textbook of Medicine	Association of Physicians of India		1999	India	Rs. 900/-

## GENERAL SURGERY

Theory: 60 Hours

1. Introduction - History of Surgery	1 hour
2. Principles of surgery, Tissue care, Asepsis and anti sepsis, Theatre technique, Sterilization, Suture materials, diathermy, Laser.	2 hour
3. Classification of Diseases, General Scheme of Studying a disease - Etiopathology, Clinical features, Investigations, Diagnosis, Management, Complications, Prognosis	2 hour
4. Wounds - Classification, Clinical Assessment, Treatment, Complications, Wound Healing.	1 hour
5. Skin Grafting	1 hour
6. Inflammation and Infection - Definition, Etiology, Pathology, Classification	1 hour
7. Acute Infections - Non-specific, and Specific - Aerobic and Anaerobic abscess, Cellulites, Carbuncle, Erysipelas, Anthrax, Gonorrhoea, gas Gangrene, Tetanus, Cancrum Oris, Ludwig's Angina.	2 hour
8. Chronic Infections - Nonspecific, and Specific - Tuberculosis, Syphilis, Actinomycosis, Leprosy.	2 hour
9. AIDS	2 hour
10. Bacteraemia, Septicemia, Pyaemia, Toxaemia	1 hour
11. Hemorrhage - Classification, emergency Management, Definitive Treatment, Assessment of Blood Loss.	1 hour
12. Bleeding Disorders - Coagulation Mechanism.	1 hour
13. Syncope, Shock, Cardiac Arrest - Causes, clinical Features, Haemodynamic Changes, emergency Care, Monitoring, Definitive Treatment, Septic Shock (warm shock), Anaphylaxis.	1 hour
14. Blood Groups - Blood Transfusion - Complications of Transfusion and Management, Massive Transfusion.	1 hour
15. Blood Fractions and their uses.	1 hour
16. Ulcers - Definition, classification, etiology, Nonspecific Ulcers, Specific Ulcers - Tuberculous Ulcers, Syphilitic Ulcer, Malignant Ulcers - Squamous	2 hour

cell Carcinoma, Basal Cell Carcinoma, Malignant Melanoma, Marjolin's Ulcer, Diabetic Ulcer.	
17. Sinus and Fistula	1 hour
18. Gangrene - Gas Gangrene, Dry Gangrene, Moist Gangrene - Causes, Management.	1 hour
19. Cysts - Definition, Classification, Clinical Features, Complications, Management.	1 hour
20. Common Cysts - Mucous Cyst, Sebaceous Cyst, Dermoid Cyst, Ranula, Cystic Hygroma, Branchial Cyst, Thyroglossal cyst, Ganglion.	1 hour
21. Tumours - Definition, Classification, Etiology of Cancer, Spread of Cancer, Early Diagnosis, Investigations, Modalities of Treatment and Prognosis, Recent Advances	2 hour
22. Common Benign and Malignant Tumours of Head and Neck Region - Lipoma, Fibroma, Neurofibroma, Haemangioma, Lymphangioma, Osteoma, Carcinoma, Sarcoma	1 hour
23. Biopsy - Indications and Methods	1 hour
24. Diseases of Lymphatic and Lymph nodes - a. Lymphangitis - Acute and Chronic, chronic Lymphoedema b. Lymphadenopathy - Classification i. Inflammatory - Acute and Chronic, Non-specific and Specific - Tubercular Lymphadenitis, Cold abscess - Collar Stud Abscess. ii. Malignant Tumours - - Primary : Hodgkin's Disease, Non Hodgkin's Lymphoma - Secondary carcinoma	1 hour
25. Diseases of Mouth, Lip, Tongue, Palate & Tonsils - - Ulcers, Stomatitis, Leukoplakia, Carcinoma of Lip, Cheek, Tongue - Ranula - Sublingual Dermoid - Tonsillitis, Quinsy	1 hour
26. Salivary Glands - - Acute and Chronic Infections - Parotid Abscess, Salivary Calculus - Salivary Tumours - Classification, Mixed Parotid Tumours - Carcinoma, Adenolymphoma, Sjogren's Disease.	1 hour
27. Neck Swellings - Midline and Lateral Swellings, Cystic and Solid Swellings. - Classification, Differential diagnosis, Treatment.	1 hour
28. Head Injury Management	1 hour

29. Facio-Maxillary Injuries	1 hour
30. Management of Severely Injured Patient - Resuscitation	1 hour
31. Fractures and Dislocations - Causes, General Principles of Management, Healing of Fractures and Complications	1 hour
32. Fractures of Mandible	1 hour
33. Jaw Swellings - Epulis, Odontomes, Bone Cysts and Tumours, Burkitt's Lymphoma	1 hour
34. Osteomyelitis of Mandible	1 hour
35. Thyroid Gland - Development, Congenital anomalies, Classification of goitres, Acute and Chronic Thyroiditis, Hashimoto's Disease, Reidel's Thyroiditis, Hyperthyroidism, Hypothyroidism, Adenoma, Carcinoma.	1 hour
36. Parathyroid - Hyperparathyroidism, Tetany, Calcium Metabolism.	1 hour
37. Pituitary Gland	1 hour
38. Tracheostomy - Indications, Steps of Operation, Post Operative Care	1 hour
39. Diseases of Arteries and Veins in general - Varicose Veins, Atherosclerosis, Aneurysm, Carotid Body Tumours	1 hour
40. Nervous System - Nerve Injury, Regeneration, Repair, Nerve Grafting. - Facial Nerve Palsy, Trigeminal Neuralgia	1 hour
41. Burns and Scalds	1 hour
42. Development of Face - Cleft Lip and Palate repair	1 hour
43. Principles of Anaesthesia	1 hour

**Desirable to Know:**

1. Brief Surgical Anatomy of Pharynx, Oesophagus, Paranasal Airsinuses. Diseases related to obstructive ones in pharynx and Oesophagus.
2. Introduction to - Oncology, Radiotherapy, Surgery and Genetic Engineering.  
- 1 Hour

## Ophthalmology

### Curriculum for III B.D.S. students

Suggestions: 2 lectures-cum-demonstration (clinical \ visual)  
I Lecture:- brief Outline of Surgical Anatomy of Eye and Orbit

5 Hours

- An outline of Ocular and Orbital Involvement in relation to Oral Diseases (Infections, Inflammations of the eye like Uveitis / Exophthalmitis / Optic Neuritis / Post-operative infections of the eye due to Dental sepsis / Invasion of tumours of Oral Cavity to the Orbit etc.) / Oral Surgery / Facial Injuries.

II Lecture:- Clinical Assessment of Ocular / Orbital Involvement.

- Recognition of common symptoms and signs of ocular and orbital involvement (Ecchymosis of lids, sub-conjunctival haematoma, Conjunctival Ecchymosis Chemosis, Proptosis: pupils: Diplopias: vision recording etc.)
- Management of superficial foreign bodies in the eye. (Prevention by protection/through eye wash with normal saline/removal of superficial conjunctival foreign bodies/for corneal or intraocular-foreign bodies to refer immediately)
- Timely referral to Ophthalmologist for any ocular/orbital problem.

### E.N.T.

Ear : Middle Ear Infection	}	5 hours
Nose : Para nasal sinuses Infection		
Throat : Tonsillitis & Peritonsillar Abscess		

**Clinicals** : 90 Hours (posting in a general hospital)

### Scheme of Examination

A. Theory : 100 Marks

**Distribution of Topics and Type of Questions:**

Contents	Type of Questions and Marks	Marks
<ul style="list-style-type: none"> <li>• Principles of surgery, Tissue care, Asepsis and anti sepsis, Theatre technique, Sterilization, Suture materials, diathermy, Laser.</li> <li>• Wounds - Classification, Clinical Assessment, Treatment, Complications, Wound Healing.</li> <li>• Acute Infections - Non-specific, and Specific - Aerobic and Anaerobic abscess, Cellulites, Carbuncle, Erysipelas, Anthrax, Gonorrhoea, gas Gangrene, Tetanus, Cancrum Oris, Ludwig's Angina.</li> <li>• Bacteraemia, Septicemia, Pyaemia, Toxaemia</li> <li>• Hemorrhage - Classification, emergency Management, Definitive Treatment, Assessment of Blood Loss.</li> <li>• Syncope, Shock, Cardiac Arrest - Causes, clinical Features, Haemodynamic Changes, emergency Care, Monitoring, Definitive Treatment, Septic Shock (warm shock), Anaphylaxis.</li> <li>• Gangrene - Gas Gangrene, Dry Gangrene, Moist Gangrene - Causes, Management.</li> </ul>	<p style="text-align: center;">Long Essays 2 x 10 marks</p>	20
<p>Questions may be asked from all the topics</p>	<p>Short Essays 10 x 5 marks + Short Answers 10 x 3 marks</p>	<p>30</p> <p>20</p>
	<p><b>Total</b></p>	<p><b>70</b></p>

- B. Viva Voce : 20 Marks**  
**C. Internal Assessment - Theory : 10 marks, Practicals : 10 marks**  
**D. Clinicals : 90 Marks**

**Long Case : One which includes**

Case History	10 Marks
Clinical Examination	30 Marks
Suggested investigations	10 Marks
Diagnosis, DD	20 Marks
Management	05 Marks

**Books for Reading:**

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication	Price
A Manual on Clinical Surgery	Somen Das	4th	1996	Dr.S.Das Calcutta	Rs. 430/-
Bailey & Love's Short Practice of Surgery	Charles. V. M. Ann	23rd	2000	Oxford University Press	\$ 29.00
Hamilton Baileys Demonstrations of Physical signs in Clinical Surgery	Hamilton Bailey	18th	1997	Butterworth Heinemann U.K.	\$ 67.50

**Other Books for Reference:**

1. Oxford Text Book of Surgery
2. Text Book of Surgery by Devita
3. Surgery by Sebastin
4. Surgery by somalal
5. Text Book of Surgery by Chatterjee
6. Surgical Anatomy by Heereggor
7. Diseases of Eye by Parson
8. Text Book of Ophthalmology by Vasudev Anand Rao
9. E.N.T. Diseases by Mohammed Muqbool
10. E.N.T. Diseases by N.C.Day
11. E.N.T. Diseases by K.K.Ramalingam

# III BDS

## ORAL PATHOLOGY AND MICROBIOLOGY

Theory: 120 Hours

### ORAL PATHOLOGY

#### MUST KNOW

#### 1. Benign and Malignant Tumours of the Oral Cavity (30 hrs)

- a. Benign tumours of epithelial tissue origin
  - Papilloma, Keratoacanthoma, Nevus
  
- b. Premalignant lesions and conditions:
  - Definition, classification
  - Epithelial dysplasia
  - Leukoplakia, Carcinoma in-situ, Erythroplakia, Palatal changes associated with reverse smoking, Oral submucous fibrosis
  
- c. Malignant tumours of epithelial tissue origin
  - Basal Cell Carcinoma, Epidermoid Carcinoma (Including TNM staging), Verrucous carcinoma, Malignant Melanoma.
  
- d. Benign tumours of connective tissue origin :
  - Fibroma, Giant cell Fibroma, Peripheral and Central Ossifying Fibroma, Lipoma, Haemangioma (different types). Lymphangioma, Chondroma, Osteoma, Osteoid Osteoma, Benign Osteoblastoma, Tori and Multiple Exostoses.
  
- e. Tumour like lesions of connective tissue origin :
  - Peripheral & Central giant cell granuloma, Pyogenic granuloma, Peripheral ossifying fibroma
  
- f. Malignant Tumours of Connective tissue origin :
  - Fibrosarcoma, Chondrosarcoma, Kaposi's Sarcoma Ewing's sarcoma, Osteosarcoma Hodgkin's and Non Hodgkin's Lymphoma, Burkitt's Lymphoma, Multiple Myeloma, Solitary Plasma cell Myeloma.
  
- g. Benign Tumours of Muscle tissue origin :
  - Leiomyoma, Rhabdomyoma, Congenital Epulis of newborn, Granular Cell tumor.
  
- h. Benign and malignant tumours of Nerve Tissue Origin
  - Neurofibroma & Neurofibromatosis-1, Schwannoma, Traumatic Neuroma, Melanotic Neuroectodermal tumour of infancy, Malignant schwannoma.
  
- i. Metastatic Tumours of Jaws and Soft Tissues of Oral Cavity

## **2. Tumours of the salivary glands**

**(8 hrs)**

### Classification

- a. Benign tumours
  - Pleomorphic adenoma
  - Warthin's tumor
  - Basal cell adenoma
  - Canalicular adenoma
  
- b. Malignant tumors of the salivary glands
  - Malignant pleomorphic adenoma
  - Adenoid Cystic carcinoma
  - Acinic Cell carcinoma
  - Mucoepidermoid carcinoma
  - Central Mucoepidermoid carcinoma
  - Clear cell carcinoma
  
- c. Non Neoplastic enlargement of Salivary glands
  - Sjogrens syndrome
  - Mickulicz's disease
  - Necrotising Sialometaplasia

## **3. Cysts of Odontogenic Origin & Pseudocysts**

**(8 hrs)**

- Introduction and Classification of Cysts of Oral Region
- Odontogenic Cysts
- Odontogenic Keratocyst, Dentigerous Cyst, Dental Lamina Cyst of newborn, Gingival Cyst of adults, Lateral Periodontal Cyst, Calcifying Odontogenic Cyst, Radicular Cyst.
- Pseudocysts
- Aneurysmal bone cyst, Traumatic bone cyst, Mucous extravasation phenomenon

## **4. Tumours of Odontogenic Origin**

**(9 hrs)**

- Classification

### **BENIGN:**

- a. Odontogenic epithelium without Odontogenic ectomesenchyme- Ameloblastoma, Calcifying Epithelial Odontogenic Tumour, Adenomatoid Odontogenic Tumour, Squamous Odontogenic Tumor
  
- b. Odontogenic epithelium with Odontogenic ectomesenchyme with or without hard tissue formation-- Ameloblastic Fibroma, Ameloblastic Fibro-odontoma, Odontoma, Dentinogenic Ghost cell Tumor
  
- c. Odontogenic ectomesenchyme with or without included Odontogenic epithelium- Peripheral and Central Odontogenic Fibroma, Odontogenic Myxoma, Benign Cementoblastoma.

**MALIGNANT**

- a. Odontogenic carcinomas : Metastasizing ameloblastoma, Ameloblastic carcinoma

**5. Regressive alterations of teeth**

**(2 hrs)**

- a. Attrition, abrasion, erosion, abfraction
- b. Dentinal sclerosis, dead tracts, secondary dentin, pulp calcifications
- c. Resorption of teeth (internal & external)
- d. Hypercementosis and Cementicles

**6. Infections of the Oral cavity(10 hrs)**

- a. Bacterial Infections: Scarlet fever, Diphtheria, Tuberculosis, Syphilis, actinomycosis, Tetanus, Noma.
- b. Viral Infections : Herpes Simplex, Measles, Mumps, Chicken Pox, Herpes Zoster, Cytomegalic Inclusion disease, H.I.V and Oral Manifestations of AIDS
- c. Fungal Infections : Candidiasis, Histoplasmosis, Phycomycosis and Rhinosporidosis.

**7. Allergic and Immunological Diseases of the Oral cavity**

**(2 hrs)**

- Immunological Diseases: Recurrent Aphthous Stomatitis, Bechet's Syndrome, Reiter's Syndrome, Sarcoidosis, Wegener's Granulomatosis
- Allergic Diseases: Angioedema, Stomatitis Medicamentosa, Stomatitis Venenata

**8. Spread of Oral Infection**

**(2 hrs)**

- a. Cellulitis, Ludwig's Angina, Intra Cranial Complication of Dental Infection, Maxillary sinusitis, Focal Infection and foci of Infection (Definition, Mechanism and significance)

**9. Physical and Chemical Injuries of the Oral Cavity**

**(5 hrs)**

- a. Physical Injuries of Teeth
  - Bruxism, Ankylosis
  
- b. Physical Injuries of Bone
  - Traumatic Bone Cyst
  
- c. Physical Injuries of Soft tissues
  - Traumatic Ulcer, Denture Injuries of the Mucosa, Mucous Retention Phenomena
  
- d. Chemical Injuries of Oral Cavity
  - Aspirin Burn
  - Lead, Mercury and Bismuth Poisoning
  - Acrodynia
  - Silver poisoning
  - Dilantin sodium -induced gingival enlargement
  - Tetracycline
  
- e. Effects of Radiation on bone and Oral Mucosa

**10. Biopsy, Cytology and Healing of Oral Wounds(5 hrs)**

- Factors affecting the healing of wounds
- Healing of Extraction Wound and Dry Socket
- Healing of Fracture
- Biopsy:
- Biopsy Techniques, Processing Of Tissues With A Brief Account Of Routine Stains Used, Healing Of The Biopsy Wound
- Basic Aspects of Cytology:
- Indications, Staining of Cytosmears, Interpretation of Cytosmears
- Re-Implantation and Transplantation of Teeth

**11. Disease of Bone**

**(8 hrs)**

- Genetic:
- Osteogenesis Imperfecta, Cleidocranial Dysplasia, Craniofacial Dysostosis, Mandibulofacial Dysostosis, Pierre Robin Anomalad, Marfan's Syndrome, Down's Syndrome, Osteopetrosis, Achondroplasia, Cherubism
  
- Fibro-Osseous Lesions
- Fibrous Dysplasia
- Cemento-osseous dysplasias
  
- Unknown Etiology:
- Paget's Disease, Histiocytosis-X-Disease
  
- Disorders of the Temporomandibular Joint:
- Developmental disturbances of the TMJ
- Ankylosis of the TMJ
- Subluxation and luxation
- Myofascial pain dysfunction syndrome

**12. Blood Dyscrasias**

**(4 hrs)**

- Clinico-pathological aspects and oral manifestations of Anemias, Polycythemia, Leukopenia, Neutropenia, Agranulocytosis, Chediak-Higashi Syndrome, Leukocytosis, Infectious mononucleosis, Leukaemias, Purpura, Haemophilia

**13. Diseases of Periodontology**

**(5 hrs)**

- Stains, Calculus, Dental Plaque
- Gingivitis, Acute Necrotizing Ulcerative Gingivitis (ANUG), Gingival hyperplasia, Periodontitis, Juvenile periodontitis

**14. Diseases of Skin**

**(10 hrs)**

- Hereditary:
- Hereditary Ectodermal Dysplasia, Chondroectodermal Dysplasia, Dyskeratosis Congenita, White Sponge Nevus, Hereditary Benign Intra Epithelial Dyskeratosis, Ehler-Danlos Syndrome
  
- Immune-mediated:

- Lichen Planus, Pemphigus, Benign Mucous Membrane Pemphigoid, Cicatricial Pemphigoid, Psoriasis, Erythema Multiformae, Epidermolysis Bullosa, Scleroderma, Lupus Erythematosus

**15. Defence Mechanisms of the Oral Cavity (1 hrs)**

**16. Introduction to Forensic Odontology (2hrs)**

- Introduction, definition, aims & scope.
- Sex and ethnic (racial) differences in tooth morphology and histological age estimation
- Determination of sex & blood groups from buccal mucosa/ saliva
- Dental DNA methods
- Bite marks, rugae patterns and lip prints
- Dental importance of poisons and corrosives
- Overview of forensic medicine and toxicology

**17. Oral Aspects Of Metabolic Disease: (5 Hrs)**

- Oral Aspects of Disturbances in Mineral Metabolism: Calcium, Phosphorus, Magnesium, Zinc, Fluorine, Iron
- Oral Aspects of Avitaminoses and Hypervitaminoses: Vitamin A, Vitamin D, Vitamin C, Vitamin B complex
- Oral Aspects of Disturbances in Hormone Metabolism: Hypopituitarism, Hyperpituitarism, Hyperthyroidism, Hypothyroidism, Hypoparathyroidism, Hyperparathyroidism, Addison's disease, Cushing's Syndrome, Diabetes Mellitas

**18. Diseases of Nerves: (2hrs)**

- Trigeminal neuralgia, Sphenopalatine neuralgia, Frey's Síndrome, Burning Mouth Síndrome

**Oral Microbiology (3 Hrs)**

1. Normal Oral Microbial Flora
2. Microbiology of Dental Caries
  - Streptococcus mutans, Lactobacillus acidophilus, Actinomyces israelii, Veillonella
3. Microbiology of Periodontal Diseases:
  - Borrelia vincentii, Fusobacteria, Actinomycetes actinomycetum-comitans
4. Microbiology of Oral Infections:
  - Bacteria: Mycobacterium tuberculosis, Treponema pallidum
  - Viruses: Herpes group of viruses, Human immunodeficiency virus
  - Fungi: Candida albicans

**Practicals : 80 hours**

- a. Identification of Hard and Soft Tissue Specimens
- b. Demonstration of Cytosmear and bacteriology smear
- c. Identification of Microscopic slides of Various Oral Lesions

**Identification of the histopathologic slides of the following lesions :**

1. Pit & fissure caries
2. Smooth surface caries
3. Dental caries - liquefaction foci
4. Pulp polyp
5. Periapical granuloma
6. Dentigerous cyst
7. Radicular cyst
8. Cholesterol clefts / cholesterol crystals
9. Rushton bodies
10. Calcifying odontogenic cyst
11. Mucocele
12. Leukoplakia
13. Carcinoma-in-situ
14. Oral submucous fibrosis (h/e)
15. Fordyce's spots
16. Papilloma
17. Fibroma
18. Lipoma
19. Capillary hemangioma
20. Cavernous hemangioma
21. Lymphangioma
22. Schwannoma
23. Well differentiated squamous cell carcinoma
24. Moderately differentiated squamous cell carcinoma
25. Verrucous carcinoma
26. Malignant melanoma
27. Osteosarcoma
28. Pyogenic granuloma
29. Fibrous dysplasia
30. Ossifying fibroma
31. Paget's disease
32. Osteomyelitis (acute)
33. Osteomyelitis (chronic)
34. Peripheral giant cell granuloma
35. Central giant cell granuloma
36. Ameloblastoma (follicular)
37. Ameloblastoma (plexiform)
38. Ameloblastoma (granular cell variant)
39. Adenomatoid odontogenic tumour
40. Cementoblastoma
41. Ameloblastic fibroma
42. Compound odontome
43. Pleomorphic adenoma, preferably with metaplastic areas
44. Warthin's tumour
45. Mucoepidermoid carcinoma (high grade)

46. Mucoepidermoid carcinoma (low grade)
47. Adenoid cystic carcinoma (pas)
48. Necrotizing sialometaplasia
49. Lichen planus with civatte bodies
50. Pemphigus
51. Tuberculosis
52. Actinomycosis
53. Candidiasis

**ADDITIONAL TOPICS:**

1. Ultrastructural features, Immunofluorescence techniques for muco-cutaneous lesions and viral infections
2. Basics of immunology
3. Different type of Microscopy used in the diagnosis of oral lesions
4. Syndromes

**Scheme of Examination**

**A. Theory : 70 Marks**

Distribution of Topics and Type of Questions

Contents	Type of Questions and Marks	Marks
Both questions from Oral Pathology only	Long Essays 02 x 10 marks	20
a. 6 questions on Oral pathology b. 2 questions on Oral microbiology	Short Essays 08 x 5 marks	40
a. 4 questions on Oral pathology b. 1 question on Oral microbiology	Short Answers 05 x 2marks	10
	<b>Total</b>	<b>70</b>

**B. Viva Voce : 20 Marks**

**C. Internal Assessment - Theory : 10 Marks, Practicals : 10marks**

**D. PRACTICALS : 90 Marks**

**Spotters (total 15 spotters)**

1. Specimen : Identification & Points in Support 6x5=30 marks
2. Slides : Slides, diagrams, Labelling & Salient features, 12 slides 12x5=60 marks

**Text Books Recommended :**

Name of the Book & Title	Author	Edn.	Publisher's Name and Place of Publication	Price
Oral pathology -Clinical Pathologic Correlation	Regezi & Scuibia	5th	W. B. Saunders Company USA, 2007	\$ 25
Shafer's Text Book of Oral Pathology	R. Rajendran B. Sivapathasundharam	6th	Elsevier, 2009	Rs. 876/-
Text Book of Oral and Maxillofacial Pathology	Neville, Damm, Allen, Bouquot	3rd	Elsevier, 2009	-
Essentials of Oral Microbiology	Lakshman P Samaranayake	3rd	Churchill Livingstone, 2006	\$ 86.95

**Other suggested reading**

1. Sapp,Eversole ,Wysocki :Contemporary Oral And Maxillofacial Pathology, 3rd edition
2. R B Lucas: Pathology of tumors of oral tissues, 5th edition
3. Peter.A.Reichart, Hans P.Philipsen: Odontogenic tumors and allied lesions
4. Mervyn Shear, Paul M.Speigh: Cysts of oral and maxillofacial regions, 4th edition
5. S R Prabhu: Oral diseases of the tropics
6. Roitt, Lehner: Oral Immunology
7. Russel J Nisengard, Michael G Newman: Oral Microbiology & Immunology, 2nd edition
8. John Eveson, Crispian Scully: Colour atlas of oral pathology

## III BDS ORAL MEDICINE AND RADIOLOGY

**THEORY: 20 HOURS**

**PRACTICALS: 70 HOURS**

**MUST KNOW**

**III YEAR ORAL MEDICINE THEORY: 12 HOURS**

1. Introduction to Oral Medicine- Definition Scope and Clinical Applications	1 hour
<p>2. Principles of oral diagnosis</p> <ul style="list-style-type: none"> <li>- Definitions.</li> <li>- Importance of diagnosis and various types of diagnosis</li> <li>- Case history and components.</li> <li>- Physical examination methodologies - general examination, extra oral &amp; neck examination , intra oral examination</li> <li>- Concepts of provisional diagnosis, differential diagnosis.</li> <li>- Clinical chair side investigations and radiological investigations, exfoliative cytology; hematological, microbiological, histopathological investigations.</li> <li>- Special investigations --biochemical, sialochemical studies, serology, immunological studies.</li> <li>- Final /confirmed diagnosis.</li> <li>- Formulation of treatment plan &amp; prognosis</li> <li>- Referral for opinions.</li> </ul> <p>Examination of swelling, ulcer, erosions, sinus, fistula, pigmented lesions, red and white mucosal lesions, pain, TMJ, and lymphnodes</p> <p>Procedures for post-mortem dental examination; maintaining dental records and their use in dental practice and post mortem identification; jurisprudence and ethics.</p>	3hour
3. Regressive alterations of teeth, Developmental malformations, discoloration of teeth.	1 hour
4. Principles, procedures, and protocol for asepsis, sterilisation, infection control.	1 hour
5. Oral sepsis and its effect on general system. Inflammation- injury, infection and spread of infection, facial space infections, osteoradionecrosis.	1 hour
6. Periapical Diseases, And Diseases Of Dental Pulp, Diagnosis Of Dental Caries, Periodontal Diseases Such As Gingival Hyperplasia, Gingivitis, Periodontitis, Pyogenic Granuloma	1 hour
7. Differential diagnosis of orofacial pain: i. Pain arising from diseases of orofacial tissues like teeth, pulp, gingival and periodontal tissues, mucosa, tongue, muscles, blood vessels, lymph nodes, bone, paranasal sinuses, salivary glands etc.	2 hour

<p>ii. Pain arising due to CNS diseases: pain due to intracranial and extracranial involvement of cranial nerves. (multiple sclerosis, cerebrovascular diseases, troter's syndrome etc.). Neuralgic pain due to unknown causes: trigeminal neuralgia, glossopharyngeal neuralgia, sphenopalatine ganglion neuralgia, periodic migrainous neuralgia and atypical facial pain.</p> <p>iii. Referred pain: pain arising from distant tissues &amp; organs like heart, spine etc.altered sensations like cocageusia, halitosis.</p> <p><b>Neuromuscular disorders:</b></p> <p>i. Nerves:(a) neuropraxia, (b) neurotemesis (c) neuritis (d) facial nerve paralysis including Bell's palsy, Heerfordt's syndrome, Melkerson Rosenthal syndrome and Ramsay Hunt syndrome (e) neuroma (f) neurofibromatosis (g) Frey's syndrome.</p> <p>ii. Muscles: (a) Myositis ossificans (b) Myofacial pain dysfunction syndrome (c) trismus.</p>	
<p>8. Orofacial Pigmentation: Exogenous And Endogenous Pigmentations</p>	<p>1 hour</p>
<p>9.Pharmcotherapeutics : General therapeutic measures- drugs commonly used in oral medicine viz. Antibiotics, chemotherapeutic agents, anti-inflammatory and analgesic drugs, corticosteriods, antiviral drugs, antifungal drugs, antitubercular drugs, antihistamines, immunomodulators, immunosuppressive drugs, sialogogues, antisialogoguges.</p>	<p>1 hour</p>

## III BDS

# ORAL MEDICINE AND RADIOLOGY

### Radiology

III YEAR THEORY : 8 Hours

1. Introduction to Oral Radiology -History, origin, Definitions, scope & limitations.	1 hour
2. Basic physics in radiology - Radiographic equipment - Radiographic accessories (film holders, beam directional devices, intensifying screens, extra oral cassettes, grids etc.) - Radiographic image receptors  Factors responsible for ideal radiographs: i. KvP and ma of X-ray machine ii. Filters iii. Collimations iv. Intensifying screens v. Grids Faulty radiographs and artefacts in radiographs.	1 hour
- Production of X rays (dark room procedures, composition of developer fixer, safe lighting, processing technique- manual/ automatic, storage of films)	1 hour
- Properties of X rays - Sources of radiation. - Electromagnetic spectrum & types of radiation - Electro physical factors - Collimation, Filtration - Films - Principles of Shadow Casting - Projection Geometry - Object localization techniques	2 hour
3. Principles of Intra oral Radiography, techniques, indications of - IOPA Bitewing, Occlusal radiography - lecture	1 hour
4. Radiographic interpretation - I - Principles, procedures. - Normal radiographic landmarks of jaws & adjacent structures. - Radiographic interpretations & differential diagnosis in dental caries periodontal diseases, periapical disease	2 hour

## III BDS ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

Course Details - III Year B.D.S and IV Year B.D.S

### TEACHING HOURS:

Mode of Teaching	III Year B.D.S	IV Year B.D.S
Theory	20 Hours	30 Hours
Clinical	70 Hours	100 Hours
<b>Total</b>	<b>90 Hours</b>	<b>130 Hours</b>

### III YEAR B.D.S - COURSE SYLLABUS:

Subject	Hours
1. Introduction, Definition, Historical Background, Aims and Objectives of Orthodontics and Need for Orthodontic care.	1 Hour
2. Growth and Development: In General a. Definition b. Growth spurts and Differential growth c. Factors influencing growth and development d. Methods of measuring growth e. Growth theories (Genetic, Sicher's, Scott's, Moss's, Petrovics, Multifactorial) f. Genetic and epigenetic factors in growth g. Cephalocaudal gradient in growth Morphologic Development of Craniofacial Structures a. Methods of Bone growth b. Prenatal growth of craniofacial structures c. Postnatal growth and development of: cranial base, maxilla, mandible, dental arches and occlusion	6 Hours
3. Functional Development of Dental Arches and Occlusion a. Factors influencing functional development of dental arches & occlusion b. Forces of occlusion c. Wolfe's law of transformation of bone d. Trajectories of forces Clinical Application of Growth and Development	2 Hours
4. Malocclusion - In General a. Concept of normal occlusion	3 Hours

<ul style="list-style-type: none"> <li>b. Definition of malocclusion</li> <li>c. Description of different types of Dental, skeletal and functional malocclusion</li> </ul> <p>Classification of Malocclusion Principle, description, advantages and disadvantages of classification of malocclusion by Angle and modification, Simon, Lischer and Ackerman and Proffit.</p>	
5. Normal and Abnormal Function of Stomatognathic System	1 Hour
<p>6. Aetiology of Malocclusion</p> <ul style="list-style-type: none"> <li>a. Definition, importance, classification, local &amp; general aetiological factors</li> <li>b. Etiology of following different types of malocclusion <ul style="list-style-type: none"> <li>i. Midline diastema</li> <li>ii. Spacing</li> <li>iii. Crowding</li> <li>iv. Cross-Bite: Anterior / Posterior</li> <li>v. Class III Malocclusion</li> <li>vi. Class II Malocclusion</li> <li>vii. Deep Bite</li> <li>viii. Open Bite</li> </ul> </li> </ul>	3 Hours
<p>7. Diagnosis and Diagnostic Aids</p> <ul style="list-style-type: none"> <li>a. Definition, Importance and classification of diagnostic aids</li> <li>b. Importance of case history and clinical examination in orthodontics</li> <li>c. Study Models: - Importance and uses - Preparation and preservation of study models</li> <li>d. Importance of intraoral X-rays in orthodontics</li> <li>e. Panoramic radiographs - Principles, Advantages, Disadvantages and uses</li> <li>f. Cephalometrics: Its advantages and disadvantages <ul style="list-style-type: none"> <li>i. Definition</li> <li>ii. Description and use of cephalostat</li> <li>iii. Description and uses of anatomical landmarks lines and angles used in cephalometric and analysis</li> <li>iv. Analysis - Steiner's, Down's, Tweed's. Ricket's E-line</li> </ul> </li> <li>g. Electromyography and its use in orthodontics</li> <li>h. Wrist X-rays and its importance in orthodontics</li> </ul>	4 Hours

#### **CLINICALS AND PRATICALS IN ORTHODONTICS DURING III B.D.S - 70 Hours**

##### **PRATICAL TRAINING DURING III B.D.S**

1. Basic wire bending exercises Gauge 22 or 0.7mm
  - a. Straightening of wires (4 Nos)
  - b. Bending of equilateral triangle
  - c. Bending of a rectangle
  - d. Bending of a square
  - e. Bending of a circle

f. Bending of U.V.

2. Construction of Clasps (upper / lower) Gauge 22 or 0.7mm

- a.  $\frac{3}{4}$  clasp (C-Clasp)
- b. Full clasp (Jackson's Crib)
- c. Adam's Clasp
- d. Triangular Clasp

3. Construction of Springs (On upper both sides) Gauge 24 or 0.5mm

- a. Finger Spring
- b. Single Cantilever Spring
- c. Double Cantilever Spring (Z-Spring)
- d. T-Springs on premolars

4. Construction of Canine retractors Gauge 23 or 0.6mm

- e. U - loop canine retractor (Upper and lower)
- f. Helical canine retractor (Upper and lower)
- g. Buccal canine retractor: - Self supported Buccal canine retractor with
  - i. Sleeve - 5mm wire of 24 Gauge
  - ii. Sleeve - 19 Gauge needle on any one side
- h. Palatal canine retractor on upper both sides - Gauge 23 or 0.6mm

5. Labial Bow

- i. Gauge 22 or 0.7mm
- j. One on both upper and lower

#### **CLINICAL TRAINING DURING III B.D.S**

1. Making upper Alginate impression

2. Making lower Alginate impression

3. Study model preparation

4. Model Analysis

- a. Pont's Analysis
- b. Ashley Howe's Analysis
- c. Carey's Analysis
- d. Bolton's Analysis
- e. Moyer's Mixed Dentition analysis
- f. Hakhoba's Analysis

## III BDS PEDIATRIC AND PREVENTIVE DENTISTRY

Teaching hours: Theory: 65 Hours,  
Pedodontics and Preventive Dentistry Lectures  
Practicals/Clinics: 170 Hours  
III Year: 70 Hours  
IV Year: 100 Hours  
Theory  
III Year: 20 Hours  
IV Year: 45 Hours

### III YEAR PEDODONTICS AND PREVENTIVE DENTISTRY: 20 HOURS

1. Introduction to Pediatric and Preventive Dentistry - Definition, Scope, Objectives and Importance	1hours
2. Growth and Development( will be covered by department of orthodontics also) - Importance of study of growth and development in Pedodontics - Prenatal and postnatal factors in growth and development - Theories of growth and development - Methods to measure growth - Development of maxilla and mandible and age related changes	2 hours
3. Development of Occlusion from birth to adolescence - Mouth of neonate, gumpads - Primary dentition period - Mixed dentition period - Establishment of occlusion - Study of variations and abnormalities	2 hours
4. Dental Anatomy and Histology - Chronology of eruption of teeth - Differences between primary and permanent teeth - Eruption disorders and their management including teething, ectopic eruption, ankylosis - Importance of first permanent molar	2 hours
5. Dental Caries - Diagnostic procedures and caries detection - Caries pattern in primary, young permanent and permanent teeth - Early childhood caries, rampant caries-definition, classification,etiology, pathogenesis, clinical features, complications and management	3 hours

<ul style="list-style-type: none"> <li>- Role of diet and nutrition in dental caries &amp; sugar substitutes</li> <li>- Diet counselling and dirtart modifications</li> <li>- Caries activity tests, caries prediction, susceptibility and their clinical application</li> </ul>	
6. Dental materials used commonly in children and adolescents ( outline revision)	1 hour
7. Case history recording <ul style="list-style-type: none"> <li>- Principles of history taking, examination, investigations, diagnosis and treatment planning</li> </ul>	1 hour
8. Pediatric operative dentistry <ul style="list-style-type: none"> <li>- Principles of operative dentistry</li> <li>- Isolation-importance and techniques</li> <li>- Modifications in cavity preparation and recent cavity designs for primary and young permanent teeth</li> <li>- Atraumatic/ Alternative Restorative Technique (ART)</li> <li>- Other methods of caries removal</li> <li>- Restoration of carious teeth (primary, young permanent and permanent teeth) using various restorative materials like glass ionomers, composites, silver amalgam</li> <li>- Preformed crowns: stainless steel, polycarbonate and strip crowns</li> </ul>	5 hours
9. Gingival and periodontal diseases in children <ul style="list-style-type: none"> <li>- Normal gingival and periodontium in children</li> <li>- Definition. Classification</li> <li>- Aetiology, pathogenesis and management of giggival and periodontal conditions seen in children and adolescents</li> </ul>	2 hours
10. Dental radiology as related to Pedodontics	1 hour

### III BDS

## ORAL AND MAXILLOFACIAL SURGERY

Total Theory Teaching hours : 70 hours  
 Total Practicals/ Clinicals: 270 hours

III year : 20 hours Theory , 70 Clinical hours  
 IV year : 50 hours Theory , 200 Clinical hours

III year BDS Theory: 20 hours

Lesson No	Topic	Details of the Topic	Duration
1.	Introduction	Definition, Aims & objectives of Oral surgery	1 hour
2.	Diagnosis in oral surgery	History Taking	2 hour
		Clinical Examination	
		Investigations	
3.	Infection control	Principles of infection control	1 hour
		Cross infection , HIV/AIDS and hepatitis	
4.	Local Anaesthesia	Neurology of facial pain Historical aspects, definition, types of LA, indications, contraindications, advantage and disadvantage. Local anaesthetic drugs, Classification Ideal requirements of LA solutions, composition and mode of action Choice of particular mode of anaesthesia Complications of LA, prevention and management. Anaesthesia technique- Mandible Anaesthesia technique- Maxilla	5 hours 2 hours 2 hours
5.	Exodontia	Introduction, indications, contra indication	1 hours
		Methods of extraction	1 hours
		Use of instruments and complications – Prevention and management	2 hours
6.	Medical Emergency		3 hour
7.	Medical Compromised Patients		
<b>Total</b>			<b>20 hours</b>

**Text Books:**

Alling John F et al	Impacted teeth
Peterson L J et al	Principles of Oral and Maxillofacial Surgery Vol 1,2 & 3
Srinivasan B	Textbook of Oral and Maxillofacial Surgery
Malamed S F	Handbook of medical emergencies in the dental office
Banks P	Killey's fracture of mandible
Banks P	Killey's fracture of middle third of the facial skeleton
McGovanda	The Maxillary sinus and its dental implication
Seward G R et al	Killey and Kays outline of oral surgery Part I
McCarthy F M	Essentials of safe dentistry for the medically compromised patients
Laskin D M	Oral and Maxillofacial Surgery
Howe G L	Extraction of teeth
Howe G L	Minor oral surgery
Peterson I J et al	Contemporary Oral and Maxillofacial Surgery
Topazian R G & Goldberg M H	Oral and Maxillofacial infections

**Practical and Clinicals hours****III year BDS : 70 clinical hours.****Students are required to learn the following exercises:**

Case history taking  
 Examination of the patient  
 Recording blood pressure  
 Use of different instruments in Oral & Maxillofacial surgery  
 Various local anaesthetic injection techniques on patients

**Practical and Clinicals Quota**

Year	Clinical exercises	Quota	Category
<b>III year BDS:</b>			
	Various local anaesthetic injection techniques on patients	10 cases	must do
	Wiring techniques on models	1 exercise	must do
	Suturing techniques on models.	1 exercise	must do

# III BDS PROSTHODONTICS, CROWN AND BRIDGE INCLUDING IMPLANTOLOGY

## Teaching Hours:

Clinical: III year: 70 hours  
IV year: 300 hours

Theory: III year: 30 hours  
IV year: 80 hours

## III year Prosthodontics Theory: 30 hours

<p>1. Introduction</p> <ul style="list-style-type: none"> <li>a. Terminology - Definitions - History - Scope in Prosthodontic therapy</li> <li>b. Stomatognathic system, Craniomandibular system (Masticatory apparatus)</li> <li>c. Components of masticatory apparatus - Functions</li> <li>d. Applied Anatomy. Histology &amp; Physiology of the components of mandibular system.</li> <li>e. Applied growth and development including genetics, immunity.</li> <li>f. Reasons for loss of teeth and associated structures.</li> <li>g. Clinic and laboratory - facilities for Prosthodontic therapy (Equipments, instruments, materials).</li> <li>h. Prosthodontic therapy for diseases of craniomandibular system.</li> <li>i. Asepsis and cross infection control in clinic and laboratory. Hospital laboratory waste disposal system and management.</li> </ul> <p>Physiology, nutrition, occlusion, occlusal curves, vertical overlap, horizontal overlap, condylar path, saliva, pain and other reflexes. Neuro muscular mechanism and applied psychiatry medicine</p> <p><b>COMPLETE DENTURE PROSTHESIS</b></p>	<p>1 hour</p>
<p><b>2. BIOMECHANICS OF THE EDENTULOUS STATE</b></p> <ul style="list-style-type: none"> <li>Mechanism of tooth support</li> <li>Mechanism of complete denture support</li> <li>Masticatory load</li> <li>Mucosal support</li> <li>Residual ridge</li> <li>Psychologic effect on retention</li> <li>Functional and Para functional considerations</li> <li>Occlusion</li> <li>Functions: Mastication &amp; swallowing</li> </ul>	<p>2 hours</p>

<p>Mandibular movements  Para-functions  Distribution of stresses to the denture supporting tissues, changes in morphological face height and the temporomandibular joint  Face height  Centric relation  Temporomandibular joint changes  Individual behavioral or adaptive response  Cosmetic changes  Dietary changes  Adaptive and psychological changes  Adaptive potential of the patient</p>	
<p><b>3. Tissue response to complete denture prosthesis in the aging edentulous patient</b>  Soft tissue changes.  Soft tissue hyperplasia  Denture stomatitis  Treatment of denture stomatitis  Denture sore mouth</p>	1 hour
<p><b>4. Effects of aging</b>  Oral changes  Mucosa and skin  Residual bone and the Maxillo-mandibular Relation  Disuse atrophy  Changes in the size of the basal seat  Maxillo-mandibular relations-  Tongue and taste  Salivary flow and nutritional impairment-  Degenerative changes.  Dietary problems  Psychologic changes</p>	1 hour
<p><b>5. Preparing the patient for complete denture prosthesis</b></p>	1 hour
<p><b>6. Diagnosis and treatment planning for patient with some teeth remaining</b>  Diagnostic procedures  History and records  Immediate complaints  Systemic evaluation - CVS, respiratory, Renal, Endocrines, CNS and other systemic conditions  Temporomandibular joint disorders  Intra Oral examination  Diagnostic cast  Interarch space problems  Radiographs &amp; other investigations</p>	3 hours

<p><b>Treatment plan</b>  Deciding whether to extract the remaining teeth  Pre extraction record  The patient recently made edentulous  New Problems of the recently edentulous patient  The patient's concept of the permanence of dentures  The patient edentulous for a long time  Mental attitudes &amp; classification  The House classification: Philosophic  Indifferent  Critical  Skeptical  Application of the house classifications  Desires and expectations</p>	
<p><b>7. Diagnosis of patient with no teeth remaining</b>  Examination charts and records  General observations affecting diagnosis  - age, sex, occupation, ethnic  - general health &amp; nutrition  - social training  - patient complaints  - gait  - lip support  - lip thickness  - lip length  - lip fullness  - profile and contour of features  - tone of the facial tissues  - vertical face length  Radiographic and intraoral examination  - advantages of a radiographic examination  - intra oral examination  - color, resiliency and attachments of the mucosa  - abrasions &amp; ulcers  - pathoses  - the maxillary basal seat  - torus palatinus  - adhesions  - The mandibular basal seat  - Arch size  Disharmony in jaw sizes  Ridge form  Ridge relations  Arch shape  Sagittal profile of the residual ridge  Shape of the palatal vault  Relation of the hard and soft palate</p>	<p>2 hours</p>

<p>Muscular development Saliva Checks and lips Muscle tonus Muscular control Jaw movements Temporomandibular joint problems Tongue size and position Throat form Gagging</p>	
<p><b>8. Development of treatment plan</b> <b>Communicating with the patient</b></p> <ul style="list-style-type: none"> <li>- Nutrition care of the denture patient</li> <li>- Nutritional needs and status of the elderly</li> <li>- Impact of wearing dentures on dietary intake</li> <li>- calcium and bone health</li> <li>- vitamin supplementation</li> <li>- Nutrition counseling</li> </ul>	1 hour
<p><b>9. Identification and management of the patient with problems</b> <b>Basic rules to follow to avoid problems</b></p> <ul style="list-style-type: none"> <li>- Conduction of the comprehensive examination</li> <li>- Correctional procedures prior to making prosthesis</li> <li>- Patient behavior characteristics observed during the exam nation appointment that may indicate future management problems</li> <li>- Disrupting regular office routine</li> <li>- Overreacting to normal examination procedures</li> <li>- Downgrading or criticizing treatment provided by a previous dentist <ul style="list-style-type: none"> <li>Refusing to divulge the name of a previous dentist or dentists</li> <li>Not having paid for previous dental care</li> </ul> </li> <li>Dissatisfaction with existing prosthesis that does not coincide with you evaluation of the prosthesis</li> <li>Numerous sets of prostheses made in a short time(for example, / three in two years)</li> <li>Unrealistic desires to change facial appearance</li> <li>Recent major catastrophe in the immediate family(such as a death, divorce, or severe illness)</li> <li>Legal action pending with the former dentist</li> <li>History of severe gagging and inability to wear prosthesis</li> <li>Crying during discussion of previous dental experience</li> <li>Evidence of excessive smoking</li> <li>Evidence of severe bruxing and/or clenching</li> <li>Restlessness in the dental chair</li> <li>When and how to refer the patient to a specialist for treatment</li> <li>Background information</li> <li>Procedures</li> </ul>	1 hour

<p><b>10. Use of Consultation Report</b>  Contents of the Report  <b>Economics of prosthodontic service</b>  Improving the patient's denture foundation and ridge relations  <b>Nonsurgical Methods</b>  Rest for the prosthesis supporting tissues  Occlusal and vertical dimension correcting of old prostheses  Good nutrition and  Conditioning of the patient's musculature  <b>Surgical Methods</b>  correcting conditions that preclude optimal prosthetic function  Hyperplastic ridge, epulis fissuratum, and papillomatosis  Frenular attachments and pendulous maxillary tuberosities  Bony prominences, undercuts, spiny ridges, and nonparallel bony ridges  Discrepancies in jaw size  Pressure on the mental foramen  Enlargement of denture-bearing areas  Vestibuloplasty  Ridge augmentation  Replacing tooth roots by Osseo integrated dental implants  Management of remaining teeth and pulp for over dentures</p>	<p>3 hours</p>
<p><b>11. Rehabilitation of the Edentulous Patient</b>  <b>Biologic considerations for Maxillary Impressions</b>  Macroscopic Anatomy of Supporting Structures  - support for the maxillary denture  - Residual ridge  - Stress-bearing areas  - incisive papilla  - posterior palatal area  - bone of the basal seat  Macroscopic Anatomy of Limiting Structures - Resistant and non resistant areas (Peripheral valvular sealing area of a prosthesis)  - Labial frenum  - Orbicularis oris  - Buccal frenum  - Buccal vestibule  - Pterygomaxillary notch  - Palatine fovea region  - Vibrating line of the palate  <b>Microscopic anatomy</b>  - Histologic nature of soft tissue and bone  - Microscopic anatomy of supporting tissues  - Microscopic anatomy of limiting structures</p>	<p>2 hours</p>
<p><b>12. Clinical considerations of microscopic anatomy</b>  <b>Maxillary Impression Procedures</b>  Principles and objectives of Impression making</p>	<p>2 hours</p>

<p>Factors of retention of Dentures</p> <p>Physical factors</p> <ul style="list-style-type: none"> <li>- Adhesion</li> <li>- Cohesion</li> <li>- Interfacial surface tension</li> <li>- Capillary attraction</li> <li>- Atmospheric pressure</li> </ul> <p>Anatomic factor</p> <p>Mechanical factors</p> <p>Acquired muscular control</p> <p>Oral and facial musculature</p> <p>Balanced occlusion</p> <p><b>Health of the basal seat tissues</b></p> <ul style="list-style-type: none"> <li>- Inflammation of the mucosa</li> <li>- Distortion of the denture-foundation tissues</li> <li>- Excessive amounts of hyper plastic tissue</li> <li>- Degeneration of mucous membrane</li> <li>- Insufficient space between the upper and lower ridges</li> </ul> <p><b>Impressions for the edentulous patient</b></p> <p>Primary impression-Patients position, operators position, stock trays, materials- &amp; step by step procedure for making primary impression</p> <ul style="list-style-type: none"> <li>- Impression trays-special trays and design for final impression</li> <li>- Final impression materials</li> </ul> <p><b>Impression techniques</b></p> <ul style="list-style-type: none"> <li>- First technique-border molded special tray</li> <li>- Second technique-one step border molded tray</li> <li>- Third technique-custom tray design based on the previously worn prosthesis</li> </ul>	
<p><b>13. Biologic considerations for mandibular impressions</b></p> <p>Sequelae of tooth loss</p> <p>Macroscopic Anatomy of the supporting structures</p> <ul style="list-style-type: none"> <li>- Crest of the residual ridge</li> <li>- Buccal flange area and the buccal shelf</li> <li>- flat mandibular ridges</li> <li>- bone of the basal seat</li> <li>- stages of change in the mandible</li> <li>- mylohyoid ridge</li> <li>- throat form and tongue positions</li> <li>- mental foramen area resorption</li> <li>- insufficient space between the mandible and the tuberosity</li> <li>- low mandibular ridges</li> <li>- direction of ridge resorption</li> <li>- torus mandibularis</li> </ul> <p><b>Macroscopic Anatomy of Limiting Structures</b></p> <p>Buccal and labial borders</p> <p>Buccal vestibule</p> <p>External oblique ridge and the buccal flange</p>	2 hours

<p>           Masseter muscle region            Distal extension of the mandibular impression            Retromolar region and pad            Lingual borders            Influence and action of the floor of the mouth            Mylohyoid muscle and mylohyoid ridge            Sublingual gland region            Direction of the lingual flange            Alveololingual sulcus            Lingual frenum and lingual notch            Lingual flange  <b>Microscopic Anatomy</b>            Supporting tissues            - crest of the residual ridge            - buccal shelf         </p>	
<p> <b>14. Mandibular Impression procedures</b>            Classification of Mandibular Impressions            Aims and objectives, and theories of impression making            - selective pressure impressions            - pressure less impressions            Construction Procedures            - First technique-selective pressure mandibular impression border-molded special tray            - Second technique-selective pressure mandibular impression-one step border- molded tray            - Third technique-selective pressure Mandibular impression custom design based on the previously worn prosthesis         </p>	1 hours
<p> <b>15. Biologic considerations in jaw relations and jaw movements</b>            Anatomic factors            Temporomandibular Articulation            Classification of Jaw relations            - orientation relations            Face bow            - Vertical relations            - Horizontal relations         </p>	2 hours
<p> <b>16. Movements of mandible</b>            practical significance of understanding mandibular movements            methods of studying mandibular movements            factors that regulate jaw motion            influence of opposing tooth contacts            influence of tempormandibular joints            axes of mandibular rotation            muscular involvement in jaw motion            clinical understanding of mandibular movement         </p>	1 hours

<p><b>17. Biological considerations in vertical jaw relations</b>  Anatomy and Physiology of Vertical jaw Relations  Establishment of the vertical maxillomandibular relations for complete denture prosthesis  Methods of determining the vertical dimension  - Mechanical methods  - Physiologic methods  - Tests of vertical jaw relations with the occlusion rims</p>	<p>1 hour</p>
<p><b>18. Biological considerations in horizontal jaw relations</b>  Muscle involvement in centric relations  Harmony between centric relation and centric occlusion  Orienting centric relation to hinge axis  Orienting centric relation and vertical relations  Significance of centric relation  Recording centric relation  - Methods of recording centric relation  Graphic, static, functional &amp; cephalometric  - Extraoral tracing and devices  - Intraoral tracing devices  - Interocclusal centric relation records</p>	<p>1 hour</p>
<p><b>19. Recording and transferring bases and occlusion rims</b>  Trial denture base, or recording base  Occlusion rims  Guide for esthetics - Central line, lip line, canine line, smile line  level of the occlusal plane  preliminary centric relations records</p>	<p>2 hours</p>

## III BDS PERIODONTOLOGY

### **Knowledge:**

- To have adequate knowledge and understanding of the etiology, pathophysiology, diagnosis & treatment planning of various periodontal problems.
- To have understood the periodontal surgical principles like pre and post surgical management of periodontal diseases.
- Essential knowledge of personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view the high prevalence of infectious disease

### **Skills**

- To obtain proper clinical history, examination of the patient, perform diagnostic procedures and order essential laboratory tests and interpret them and to arrive at a provisional diagnosis about the periodontal condition.
- To perform with competence various periodontal nonsurgical procedures. To treat non- surgically the various periodontal diseases.

### **Attitude:**

- Periodontal surgical care is to be delivered irrespective of the social status, caste, creed or religion of the patient.
- Willing to share the knowledge and clinical experience with professional colleagues.
- Respect patient right and privileges, including patients right to information and right to seek a second opinion.

- Develop attitude to seek opinion from an allied medical and dental specialists as and when required.

**Communicative Skills and Ability:**

- Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular periodontal problem and obtain a true informed consent from them for the most appropriate treatment available at that point of time.
- Develop the ability to communicate with professional colleagues.
- Develop ability to teach undergraduates, present seminars and develop leadership skills

**Teaching Hours:** Theory: 80 Hours ( III BDS-30 Hours, IVBDS- 50 Hours)

Sl. No.	Topic	Expected to know	Hours
1.	Introduction	Definition of Periodontology, Periodontics Periodontia. Brief historical background Scope of Periodontics	1
2.	Gingiva	Development , Structure , morphology histopathology of gingival tissues, functions.	2
3.	Tooth supporting structures	Periodontal ligament, cementum and alveolar bone: functions, histology, development	2
4.	Periodontal instrumentation	Sonic, Ultra sonic instrumentation gingival irrigation manual instrumentation	1
5.	Defense mechanism in the oral cavity	Role of Epithelium; Gingival crevicular fluid ; Saliva and other defensive mechanisms in the Oral environment	2
6.	Age changes in periodontal structures & their significance in geriatric dentistry	Age changes in teeth and Periodontal Structures, their association	1
7.	Plaque control	a. Mechanical- tooth brushes, interdental cleansing aids, dentifrices. b. Chemical – Classification and mechanism of action of each, pocket irrigation.	2
8.	Gingivitis	Plaque associated, ANUG ,steroid, hormone influenced, Medication influenced, desquamative gingivitis, gingivitis, other forms of gingivitis as in nutritional deficiency, bacterial and viral infections etc.	2



9.	Chemotherapeutic agents	Various chemotherapeutic agents used in periodontal therapy	1
10.	Gingival Diseases	Localised & generalize diseases gingivitis. Papillary, marginal and diffused gingivitis. Etiology, pathogenesis clinical signs, symptoms and management of-Plaque-associated gingivitis Systemically aggravated gingivitis (Sex hormones,Drugs and systemic diseases) Necrotizing ulcerative gingivitis Desquamative gingivitis associated with Lichen planus, Pemphigoid pemphigus and other Vesic ulob ullous lesions.Allergic gingivitis Infective gingivitis - Herpetic, bacterial and candidial, pericoronitis. Gingival diseases in childhood	2
11.	Gingival enlargement	Types of Gingival enlargement (Classification and differential diagnosis)	2
12.	Epidemiology of Periodontal disease	Definition of index, Incidence, Prevalence. Classification of indices.(Irreversible & reversible) Deficiencies of earlier indices used in Periodontics Detailed understanding of Sillness & Loe Plaque index, Loe and Sillness gingival index, CPITN & CPI.Prevalence of periodontal diseases in India and ther countries. Public Health significance (All these topics are covered at under community dentistry. Hence the topics may be discussed briefly however; questions may be asked from the topics for examination).	2
13.	Extension of inflammation from gingiva	Mechanism of spread of Inflammation from Gingival to deeper periodontal structures. Factors that modify the spread	1
14.	AIDS and periodontium	AIDS and periodontium	1

15.	Etiology of Periodontal diseases	Dental Plaque (Biofilm) Definition, Types, composition ; Formation: Bacterial colonisation, Growth & maturation, Disclosing agents. Role Of dental plaque in Periodontal disease Plaque microorganisms in detail Bacteria associated with periodontal diseases. Plaque retentive factors, Materia alba, Food debris, Food impaction: Definition, Types, Etiology Hirschfelds classification, Signs, symptoms & sequelae. Treatment.	2
16.	Calculus	Role of Dental calculus in disease. Definition, Types, composition, attachment, theories of formation	1
17.	Dentinal hypersensitivity	Causes, theories and management.	1
18.	Habits	- Their Periodontal significance. Bruxism & parafunctional habits, Tongue thrusting, mouth breathing, lip biting, occupational habits.	1
19.	Iatrogenic factors.	Conservative Dentistry- Restorations. Contact point, marginal ridge, surface roughness, overhanging restorations, interface between restoration and teeth . Prosthodontic Interrelationship- Bridges and other prosthesis, Pontics (types), surface contour, relationship of margins to the Periodontium . Orthodontics - Interrelation- Retention of plaque, bacterial changes.	1
20.	Systemic diseases	Diabetes, Sex hormones, Nutrition (Vitamins & Proteins) Hemorrhagic disease, Leukemia, Clotting factor disorder. Platelet disorders. PMN disorders	2

Tutorial (During Clinical Posting)

1. Infection control
2. Periodontal instruments
3. Chair position and principles of instrumentation , Maintenance of instruments
4. Basic tissues: Gingiva, periodontal ligament, cementum, alveolar bone.
5. Plaque control: mechanical and chemical
6. Motivation of patient - oral hygiene instructions

**Desirable to Know**

1. Histochemistry of periodontal tissues
2. Masticatory apparatus and functions
3. Immunology- current concepts of host response
4. Applied periodontal microbiology
5. Advanced diagnostic techniques
6. Regeneration

**Teaching Hours:** Theory - 80 Hours III BDS - 30 Hours; IV BDS - 50 Hours

**Clinical work and case discussion (III BDS & IV BDS)**

25 Detailed Case History And Discussion	75 Hours
50 Oral Prophylaxis	150 Hours
Demonstration of all Surgical Procedures	30 Hours
Maintenance Therapy	30 Hours
Total	285 Hours

**Recommended Books**

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication
Standard Book Carranza and Newman	Clinical Periodontology	10th	2007	SB saunders Company
Recommended Books Robert Genco. Henry. M.Goldman D.Walter Cohen	Contemporary Periodontics	6th	--	C.V.Mosby Company St. Louis
Jan Lindhe, T.Karring, N. P Lang.	Clinical Periodontology & Implant Dentistry	5th	1997	Munksgaard Copenhagen
Grant Strern. Listgarten	Periodontics	6th	1998	Mosby CBSn Publishers Indian Edition
S. P Ramfjord M. M. Ash.	Periodontology and Periodontics Modern Theory and Practice	--	1996	AITBS Publishers, India
T. ITO J. D. johnson	Colour Atlas of Periodontal Surgery	--		Mosby & Wolfe. U.S.A
Cohen	Atlas of Periodontal Surgery	--		C. V. Mosby Company U.S.A
Glickman	Manual of periodontal instruments		1990	W.B. Saunders and co
Wilson and Kornman	Fundamentals of periodontics	2cnd	2003	Quintessence publishing

# III BDS CONSERVATIVE DENTISTRY AND ENDODONTICS

Minimum Working hours for each subject of study  
(BDS course)

Year	Lecturer Hours	Clinical Hours	Total Hours
III year BDS:	30	70	100
IV year BDS:	80	300	380

## III year

Sl.No	Subjects	Hours
1	<b>Nomenclature Of Dentition:</b> Tooth numbering systems A D A,Zsigmondy Palmer-and FDI systems	1 hour
2	<b>Gnathological Concepts Of Restoration:</b> Physiology Of occlusion, normal occlusion,Ideal occlusion, Mandibular movements and occlusal analysis. Contours and contacts	2 hours
3	<b>Dental Cariers:</b> Aetiology,Classification.Clinical features,morphological features, Microscopic features,clinical diagnosis and sequel of dental caries	3 hours
4	<b>Preventive measures in restorative practice:</b> Plaque Control Pit and fissure sealants, dietary measure restorative Procedure and periodontal health	2 hours
5	<b>Armamentarium for cavity preparation-</b> Hand cutting instruments Terminology and classification Applications Designs, formula and sharpening of instruments. Rotary cutting instruments Dental bur Mechanism of cutting, Common design characteristics Diamond abrasive and other abrasive instruments Cutting mechanism Hazards and precautions	2 hours

6	<b>Isolation of operating field</b> Purpose and methods of isolation	2 hours
7	<b>Infection control</b> Routes of transmission of dental infection Personal barrier protection Control of onfection from aerosol and spatter sterilization procedure for Operatory Dental water line contamination and biofilm Disposal of wastes	3 hours
8	<b>Patient assessment, examination, diagnosis, and treatment planning</b> <b>Patients and operator position</b>	3 hours 1 hour
9	<b>Principles of Cavity dentistry-</b> Steps and nomenclature of Cavity preparation classification of cavities	1 hour
10	<b>Pain control in operative dentistry</b>	1 hour
11	<b>Matricing and tooth separation</b>	2 hours
12	<b>Amalgam Resolution-</b> Indication, contraindication Advantages, disadvantages Cavity preparation for class I,II..V Step wise procedure for cavity Preparation and restoration including modifies designs Bonded amalgams, failure and repair of amalgam restorations	5 hours
13	<b>Hypersensitivity of dentin</b> Theories of hypersensitivity management	1 hour

### III BDS

## PUBLIC HEALTH DENTISTRY

Theory:15 Hours    Clinical/Practical:50

#### MUST KNOW

#### Syllabus:

Sl No.	Topic	No.of hours	Year of study
1.	Introduction to Dentistry: Definition of Dentistry, History of Dentistry, Scope, aims and objectives of Dentistry.	4	III BDS
2.	<b>Public Health:</b>		
	i. Health & Disease: - Concepts, Philosophy, Definition & Characteristics	5	
public	ii. Public Health: - Definition & Concepts,History of health	4	
	iii. Dentist Act 1948 with amendment. Dentist Council of India and state Dental Councils Composition and responsibilities.	1	
	iv. Indian Dental association Head Office,State and local branches	1	

## PRACTICALS/CLINICALS/FIELD PROGRAMMES IN PUBLIC HEALTH DENTISTRY

These exercises designed to help the student in III year:

1. To Understand the community aspects of dentistry
2. To take up leadership role in solving community oral health programme
3. To gain hands on experience on research methodology.

Exercises: III BDS

Sl. No.	Topic	Year of study
1.	<p><b>Short term research project: Epidemiology &amp; Advocacy</b></p> <p>Purpose: Apply the theory and practice of epidemiology, planning and evaluation, statistics to dental public health. Most of the students are unfamiliar with research and hence this short term project which will be divided across 2 years [IV &amp; V BDS] would address this issue.</p> <p>Depending on the topic chosen student can incorporate</p> <ul style="list-style-type: none"> <li>• Collection of statistical data (demographic) on population in India, birth rates, morbidity and mortality, literacy, per capita income</li> <li>• Incidence and prevalence of common oral diseases like dental caries, periodontal disease, oral cancer, fluorosis at national and international levels.</li> <li>• Oral health status assessment of the community using indices and WHO basic oral health survey methods collection.</li> </ul>	15 hrs
2.	<p><b>Field visits:</b></p> <ul style="list-style-type: none"> <li>• Visit to primary health centre-to acquaint with activities and primary health care delivery</li> <li>• Visit to water purification plant/public health laboratory/ centre for treatment of western and sewage water</li> <li>• Visit to institution for the care of handicapped, physically, mentally, or medically compromised patients</li> </ul>	20 hrs
3	<p><b>Preventive Dentistry:</b></p> <ul style="list-style-type: none"> <li>• Including case history, recording of indices, application of pit and fissure sealants, fluoride gel application procedure, A. R. T.</li> </ul> <p>Health talk : Minimum of 12 per year</p>	15 hrs

Note: Recording of oral health assessment using indices and WHO basic oral health survey methods should be in context of how information collected will be used or utilised. Therefore it is desirable for this exercise to be part of short term research project and not merely for recording.



## IV BDS PERIODONTOLOGY

Teaching Hours: Theory: 50 Hours

Sl. No.	Topic	Expected to know	Hours
1.	Classification of periodontal diseases	Need and scientific basis, classification of gingival and periodontal diseases- world workshop 1999.	1
2.	Risk Factors	Definition, Risk factors for periodontal diseases. Smoking and periodontal diseases, Role of Stress factors	1
3.	Genetic factors	Genetic factors associated with periodontal disease	1
4.	Host Response	Mechanism of initiation & progression of Periodontal disease, Basic concepts , cells, Mast cells, Neutrophils, macrophages, Lymphocytes, Immunoglobulins, complement, Immune Mechanisms and Cytokines in brief. Stages in gingivitis - Initial, early established, advanced Periodontal disease activity continuous paradigm, random burst and asynchronous multiple burst hypothesis	2
5.	Furcation involvement	Furcation involvement Various Classifications, prognosis and management.	1
6.	Bone loss patterns	Bone loss and patterns of bone destruction in periodontal disease	1
7.	Diagnosis	Routine procedures, methods of probing types of probes. -case history Halitosis, Etiology and treatment.	2 1
8.	Radiographic aids	Radiographs aids in the diagnosis of periodontal diseases	1
9.	Advanced diagnostic aids	Advanced diagnostic aids - Their role in brief	1
10.	Prognosis	Definition, types, purpose and factors	1
11.	Treatment plan	Factors to be considered	1
12.	Rationale for periodontal therapy	Regeneration, Repair, Re-attachment, New attachment	1

13.	Periodontitis	Etiology, histopathology, clinical signs& symptoms, diagnosis and treatment of chronic periodontitis, aggressive periodontitis, refractory periodontitis, Necrotising ulcerative periodontitis Periodontal abscess- definition, classification, pathogenesis, differential diagnosis & treatment	3
14.	Periodontal pocket	Definition, signs and symptoms, classification, pathogenesis histopathology, root surface changes & contents of pocket.	1
15.	Periodontal treatment of medically compromised Patients	Different systemic conditions and their effects on the periodontium. Management of patients with the various systemic complications	2
16.	Periodontal therapy in the female patient	PDL changes associated with Puberty, Menopause, pregnancy, Oral contraceptives	1
17.	Periodontal therapy	General principles of periodontal therapy. Preparation of the patient for surgical therapy	1
18.	Pocket eradication	Scaling and root planing procedures Indications, Aims and Objectives. Armamentarium - and procedure Healing following root planing. Curettage and present concepts- Definition, Indication ; Aims and Objectives Procedures and healing Gingivectomy / Gingivoplasty including crown lengthening procedure-Definition Indication and contra indication Armamentarium, Procedure and healing.	3
19.	Flap Surgery	Definition of flap; Types of flap (Design of flap- papilla preservation) Pocket eradication, Indications, armamentarium, surgical procedure and healing	2
20.	Osseous surgery	Definition; Resective and additive osseous surgery (Osseous grafts, classification of grafts)-healing; other regenerative procedures root conditioning. Guided tissue regeneration.	2
21.	Mucogingival surgery	Definition; Mucogingival problems,, Etiology & Classification of gingival recession (P.D.Miller Jr. and Sullivan and Atkins) Indications, various mucogingival surgical procedures	2
22.	Occlusion	Occlusal evaluation and therapy	1

23.	Microsurgery	Periodontal Microsurgery in brief, Electrosurgery, cryosurgery	1
24.	Splints	Periodontal splints - purpose, classification-principles of splinting	1
25.	Trauma from Occlusion (TFO)	definition, types, histopathological changes, role in periodontal disease, measures of management	1
26.	Implants	Definition, Types, Scope, biomaterials used. Periodontal considerations such as implant-gingiva and implant-bone interface. Implant failure, Peri-implantitis and management. Advanced surgical techniques	3
27.	Periodontal medicine	PDL infection associated with various systemic Diseases.	1
28.	Host modulation therapy	Principles, Agents used	1
29.	Lasers	Lasers in periodontal therapy	1
30.	Supportive periodontal therapy	Definition, Rationale. Patient Classification Factors affecting S P T; Implant maintenance	1
31.	Pharmacotherapy	Periodontal dressings ; antibiotics and antiinflammatory drugs - local drug delivery	1
32.	Pulpo-periodontal Lesions	Pulpo-periodontal involvement - Routes of Spread of infection management	1
33.	Evidence based decision making	Assessing evidence, implementing evidence based decisions in clinical practice	1
34.	Patient management	Ethical, legal and practical issues in the management of periodontal patients	1



Tutorial (During Clinical Posting)

1. Third year tutorial topics
2. Diagnosis of periodontal disease
3. Determination of prognosis and treatment plan
4. Radiographic interpretation and lab investigation
5. Ultrasonic instrumentation
6. Principles of periodontal surgery
7. Periodontal surgical procedures and suturing techniques
8. Concepts of subgingival irrigation and LDD
9. Occlusion, correction & management
10. Splinting techniques in Periodontics

Desirable to Know

1. Immunology- current concepts of host response
2. Applied periodontal microbiology
3. Advanced diagnostic techniques
4. Regeneration
5. Application of microsurgery and LASERS in periodontics
6. Implants

Teaching Hours: Theory - 80 Hours III BDS - 30 Hours; IV BDS - 50 Hours  
Clinical work and case discussion (III BDS & IV BDS)

25 Detailed Case History And Discussion	75 Hours
50 Oral Prophylaxis- 40 handscaling, 10 ultrasonic	150 Hours
Demonstration of all Surgical Procedures	30 Hours
Maintenance Therapy	30 Hours
Total	285 Hours

### Recommended Books

Name of the Book & Title	Author	Edn.	Yr. of Publ	Publisher's Name and Place of Publication
Standard Book Carranza and Newman	Clinical Periodontology	10th	2007	SB saunders Company
Recommended Books Robert Genco. Henry. M. Goldman D.Walter Cohen	Contemporary Periodontics	6th	--	C. V. Mosby Company St. Louis
Jan Lindhe, T. Karring, N.P Lang.	Clinical Periodontology & Implant Dentistry	5th	1997	Munksgaard Copenhagen
Grant Strern. Listgarten	Periodontics	6th	1998	Mosby CBSn Publishers Indian Edition
S. P Ramfjord M. M. Ash.	Periodontology and Periodontics Modern Theory and Practice	--	1996	AITBS Publishers, India
T. ITO J. D. johnson	Colour Atlas of Periodontal Surgery	--		Mosby & Wolfe. U.S.A
Cohen	Atlas of Periodontal Surgery	--		C. V. Mosby Company U.S.A
Glickman	Manual of periodontal instruments		1990	W.B. Saunders and co
Wilson and Kornman	Fundamentals of periodontics	2cnd	2003	Quintessence publishing

## IV BDS

# ORAL MEDICINE AND RADIOLOGY

Theory: 45 Hours

Practicals : 100 Hours

### MUST KNOW

#### IV YEAR ORAL MEDICINE THEORY: 31 HOURS

<p>1. Acute infections of oral and para oral structures - bacterial, viral, fungal, parasitic including cervico facial lymphadenopathy.  <b>Bacterial:</b> Streptococcal, tuberculosis, syphilis, vincent's, leprosy, actinomycosis, diphtheria and tetanus.  <b>Fungal:</b> Candida albicans, deep seated fungal infections  <b>Virus:</b> Herpes simplex, Herpes zoster, Ramsy Hunt Syndrome, measles, herpangina, mumps, infectious mononucleosis, HIV, hepatitis -B, hepatitis-C  Granulomatous diseases: tuberculosis, sarcoidosis, midline lethal granuloma, Crohn's disease and histiocytosis X</p>	<p>2 hour</p>
<p>2. White and red lesions of oral mucosa.  White lesions: chemical burns, leukoedema, leukoplakia, fordyce's spots, stomatitis nicotina palatinus, white spongy nevus, candidiasis, lichen planus, discoid lupus erythematosus, oral submucous fibrosis  Red lesions: Erythroplakia, stomatitis venenata and medicamentosa, erosive lesions and denture sore mouth.</p>	<p>2 hour</p>
<p>3. Ulceerative lesions : Acute and chronic ulcers.  Vesiculobullous lesions of oral mucosa: herpes simplex, herpes zoster, herpangina, bullous lichen planus, pemphigus, cicatricial pemphigoid, erythema multiforme.</p>	<p>2 hours</p>
<p>4. Diagnostic protocol for differential diagnosis of cysts, odontogenic, non-odontogenic and developmental cysts.  Cysts of soft tissues : Mucocele and Ranula  Cysts of bone : odontogenic and non-odontogenic.  Tumors: Soft tissue: Epithelial: Papilloma, Carcinoma, Melanoma.  Connective tissue: Fibroma, lipoma, fibrosarcoma.  Vascular: Haemangioma, Lymphangioma.  Nerve tissue: Neurofibroma, traumatic neuroma, Neurofibromatosis.  Salivary Glands: Pleomorphic adenoma, Adenocarcinoma, Warthin's tumor, Adenoid cystic carcinoma.  <b>Hard tissue:</b>  Non-odontogenic tumors:  Odontogenic tumors:  Fibro osseous lesions of oral paraoral structures.</p>	<p>2 hours</p>

<p>5. Oral manifestations of Metabolic disorders:</p> <ul style="list-style-type: none"> <li>i. Porphyria</li> <li>ii. Haemochromatosis</li> <li>iii. histiocytosis,</li> </ul> <p>Oral manifestations of endocrinal disorders:</p> <ul style="list-style-type: none"> <li>i. Pituitary: - Acromegaly, Gigantism, hypopituitarism.</li> <li>ii. Adrenal cortex: Addison's disease (hypofunction) Cushing's syndrome (hyper function)</li> <li>iii. Parathyroid glands: Hyperparathyroidism, hypoparathyroidism</li> <li>iv. Thyroid glands: Cretinism(hypothyroidism), myxoedema, hyperthyroidism</li> <li>v. Pancreas: Diabetes.</li> </ul> <p>Nutritional deficiency affecting oral cavity: Vitamins: Riboflavin, nicotinic acid, folic acid, vitamin B12, vitamin C (scurvy)</p> <p>Blood disorders:</p> <ul style="list-style-type: none"> <li>i. Red blood cell diseases: iron deficiency anemia, plummer Vinson syndrome, pernicious anemia, thalassemia, sickle cell anemia, erythroblastosis foetalis, aplastic anemia, polycytemia.</li> <li>ii. WBC disorders: Neutopenia, cyclic neutropenia, agranulocytosis, infectious mononucleosis and leukemias</li> <li>iii. Bleeding &amp; clotting disorders: thrombocytopenia, purpura, haemophilia, Christmas disease and Von Willebrand's disease.</li> </ul>	2 hours
<p>6. Dermatological diseases importance to dentistry:</p> <ul style="list-style-type: none"> <li>i. Ectodermal dysplasia</li> <li>ii. Hyperkeratosis palmoplantaris with periodontopathy</li> <li>iii. Scleroderma</li> <li>iv. Lichen planus including grinspan syndrome</li> <li>v. lupus erythematoses</li> <li>vi. Pemphigus</li> <li>vii. Erythema multiforme</li> <li>viii. Psoriasis.</li> </ul>	2 hours
<p>7. Disease of tongue and tongue in systemic diseases:</p> <p>Aglossia, ankyloglossia, bifid tongue, fissured tongue, scrotal tongue, macroglossia, microglossia, geographic tongue, median rhomboid glossitis, depapillation of tongue, hairy tongue, atrophic tongue, reactive lymphoid hyperplasia, glossodynia, glossopyrosis, ulcers, white and red lesions.</p>	1 hour
<p>8. Concept of pre malignancy, Premalignant lesions and conditions</p>	1 hour
<p>9. Oral Cancer, Etiology and Classification</p> <p>Epidemiology.</p> <ul style="list-style-type: none"> <li>- Screening.</li> <li>- Clinical Features and Clinical staging</li> <li>- Diagnosis.</li> <li>- Laboratory Investigations and Diagnosis.</li> <li>- Immune concepts in Oral Malignancies.</li> <li>- Management Chemotherapy / Radiotherapy.</li> </ul>	2 hour

<p>10. Diseases of salivary glands:</p> <ul style="list-style-type: none"> <li>i. Developmental disturbances: Aplasia, atresia and aberration.</li> <li>ii. Functional disturbances : Xerostomia, ptyalism.</li> <li>iii. Inflammatory conditions: Non-specific sialadenitis, mumps, sarcoidosis, heerdfort's syndrome (uveoparotid fever), necrotizing sialometaplasia.</li> <li>iv. Cysts and tumors: Mucocele, ranula, ;pleomorphic adenoma, mucoepidermoid carcinoma.</li> <li>v. Miscellaneous : sialolithiasis, Sjogren's syndrome, mikuliez's disease and sialosis.</li> </ul>	1 hour
11. Autoimmune diseases affecting oral cavity	2 hour
<p>12. Allergic: Local allergic reactions, anaphylaxis, serum sickness (local and systemic allergic manifestations to drugs and chemicals)</p> <p>Immunoallergological lesions of oral cavity:</p> <ul style="list-style-type: none"> <li>i. Multiple myeloma</li> <li>ii. HIV clinical manifestations, opportunistic infections, neoplasms</li> <li>iii. Thrombocytopenia</li> <li>iv. Lupus erythematosus</li> <li>v. Scleroderma</li> <li>vi. Dermatomyositis</li> <li>vii. Rheumatoid arthritis</li> <li>viii. Recurrent oral ulcerations including behcet's syndrome and reiter's syndrome.</li> </ul>	1 hour
<p>13. Diseases of TMJ : Developmental abnormalities of condyle, rheumatoid arthritis, osteoarthritis, subluxation and luxation, internal derangement of TMJ, myofascial pain dysfunction syndrome.</p> <p>Diseases of Bone: Development disorders, anomalies, exostosis and tori, infantile cortical hyperostosis, osteogenesis imperfecta, marfan's syndrome, osteoporosis. Miscellaneous- Paget's disease, mono and polyostotic fibrous dysplasia, cherubism,</p>	3 hour
14. Diseases of maxillary sinus	1 hour
<p>15. Oral manifestations of systemic diseases and medical emergency management, cardiac patient, cardiac arrest, specific infections, syncope, anaphylaxis.</p> <p>Physiologic changes: Puberty, pregnancy and menopause.</p>	1 hour
16. Maxillofacial trauma clinical diagnostic protocol	1 hour
17. Psychosomatic diseases, burning mouth syndrome, glossopyrosis glossodynia, orofacial dysaesthesia, cancerophobia., MPDS, taste abnormalities	1 hour
<p>18. Forensic Odontology including radiography in forensic odontology:</p> <ul style="list-style-type: none"> <li>i. Medicolegal aspects of orofacial injuries</li> <li>ii. Identification of bite marks</li> </ul>	1 hour

iii. Determination of age and sex iv. Identification of cadavers by dental appliances, restorations and tissue remnants.	1 hour
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## IV BDS ORAL MEDICINE AND RADIOLOGY

### MUST KNOW IV YEAR RADIOLOGY THEORY: 14 HOURS

1. Radiographic interpretation II - Radiographic artifacts.	1 hour
- Radiographic features of common pathologies of jaw bones (cysts , tumors, fibro-osseous diseases, metabolic, endocrine, nutritional blood disorders)	2 hour
- TMJ radiography -	1 hour
2. Biologic effects of radiation and radiation protection	2 hours
3. Principles of radiotherapy- preparation of patient for oral radiotherapy, management of post radiation oral complications	1 hour
4. Principles of extra oral radiography- techniques and indications of maxillary sinus, trauma radiography, cephalometry, various skull projections.	2 hour
5. Contrast radiography- technique and interpretation of Sialography, cystography, arthrography, angiography- lecture.	1 hour
6. Panoramic Radiography	1 hour
7. Advance radiographic techniques- CT scans, PET scans, radionucleide diagnosis, digital radiography, sialography, digital imaging, xeroradiography	1 hour

#### Clinicals

#### III & IV year BDS (inclusive)

#### ORAL MEDICINE

1. Detailed presentation of case histories of (minimum) ten special cases.

#### RADIOLOGY

1. Taking IOPA for at least 25 cases and processing them.
2. Taking at least 2 Bite wing radiographs and processing them.
3. Interpretation of at least 25 IOPA Radiographs.

### CLINICAL DEMONSTRATIONS

1. Demonstrations of the following radiographic techniques:

- a. Maxillary and mandibular occlusal view
- b. Orthopantomograph
- c. Lateral cephalogram
- d. Postero anterior view of mandible
- e. Paranasal sinus view
- f. Reverse townes's view
- g. Submentovertex view
- h. Lateral oblique view for ramus and body of mandible

2. Identification Of The Above Mentioned Radiographs And Their Interpretation

### Scheme of Examination

#### A. Theory (university written examination) 70 Marks

Distribution of Topics and Types of Questions

Contents	Type of Questions and Marks	Marks
a. 1 Question from Oral Medicine b. 1 Question from Radiology	Long Essays 2 x 10 marks	20
a. 4 Questions from Oral Medicine b. 4 Questions from Radiology	Short Essays 8 x 5 marks	40
a. 3 Questions from Oral Medicine b. 2 Questions from Radiology	Short Answers 2x5	10
	Total	70

#### B. Internal Assessment Theory: 10 marks, Practicals:10 marks

#### C. Clinicals: 90 Marks

I. Clinicals in Oral Medicine: 60 Marks (recording of Long Case)

- a. Case History taking 30 Marks
- b. Diagnosis & Differential Diagnosis 10 Marks
- c. Investigations 10 Marks
- d. Management 10 Marks

II. Clinicals in Radiology: 30 Marks (One Intra.a-Oral Periapical Radiograph to be taken)

- a. Technique 10 Marks
- b. Processing 10 Marks
- c. Interpretation 10 Marks

D. Viva Voce 20 Marks  
Theory : 100  
University written exam : 70

Viva Voce	:	20
Internal assessment (written)	:	10
Total	:	<u>100</u>

Clinical:100		
University exam	:	90
Internal assessment (written)	:	10
Total	:	<u>100</u>

### **BOOKS RECOMMENDED:**

#### **a. Oral Diagnosis, Oral Medicine, Oral Pathology**

1. Burkit - Oral medicine - J.B. Lippincott Company
2. Coleman - Principles of Oral Diagnosis - Mosby Year Book
3. Jones - Oral Manifestations of Systemic Diseases - W. B. Saunders company
4. Mitchell - Oral Diagnosis & Oral Medicine
5. Kerr - Oral Diagnosis
6. Miller - Oral Diagnosis & Treatment
7. Hutchinson - Clinical Methods
8. Shafers - Oral Pathology
9. Sonis. S.T., Fazio.R.C. and Fang. L - Principles and Practice of Oral Medicine
10. Differential diagnosis of oral lesions - Norman wood KW and Paul W. HGoaz 4th edition, 1997, Mosby Philadelphia.
11. Hand book of medical emergencies in dental office by Malamed Stanley 3rd edition 1989, - AITBS, Mosby.
12. Orofacial pains, classification, diagnosis and management by Bell Welden, 4th edition 1989, year book Medical publishers, Chicago.
13. Oral & Marillofacial Injections - Topazian Richard
14. Oral & Marillofacial Pathology - Neville
15. Oral Pathology - Clinical Pathology Carrelation Reglzi

#### **b. Oral Radiology**

1. White & Goaz - Oral Radiology - Mosby Year Book
2. Weaheman - Dental radiology - C. V. Mosby Company
3. Stafine - Oral Roentgenographic Diagnosis - W.B. Saunders company
4. Fundamentals of oral medicine and radiology by Bailoor DN and Nagesh KS 1st and 2nd edition 1994, 2001. Contemporary dental publishers
5. Dental Radiography - Principles & Technique - Haring, Howerlow
6. Essentials of Dental Radiography & Radiology - Eevie Whailes

#### **c. Forensic Odontology**

1. Derek H. Clark - Practical Forensic Odontology - Butterworth - Heinmann (1992)
2. C. Michel Bowers, Gary Bell - Manual of Forensic Odontology - Forensic Pr.(1995)

## IV BDS

### PUBLIC HEALTH DENTISTRY

Theory: 45 hours

Clinical/Practical:150 hour

Sl.No.	Topic	No. of hours	Year of study
<b>1. PUBLIC HEALTH</b>		2	<b>IV BDS</b>
i. General Epidemiology:-definition,objectives,methods		2	
ii.Environment Health: -Concepts,principles,protection, sources,purification environmental sanitation of water disposal of waste sanitation,then role in mass disorders		2	
iii. Health Education: -Definition,concepts,principles,methods, and health education aids		2	
iv.Public Health Administration: -Priority,establishment, manpower,private practice management, hospital management.		2	
v.Ethics and Jurisprudence: Professional liabilities,negligence, malpractice, consents, evidence, contrasts, and methods of identification in forensic dentistry.		2	
vi.Behavior sciences:Definition of sociology,anthropology and psychology and their in dental practice and community.		2	
vii. Health care delivery system: Center and state, oral health policy,primary health care, national programmes, health organizations.		2	
<b>2. Dental Public Health</b>			
i. Definition and difference between community and clinical health.		2	
ii. Nutrition in oral diseases		2	
iii. Delivery of dental care: Dental auxiliaries, operational and non-operational, incremental and comprehensive health care, school dental health Planning & Evaluation		4 1	
iv. Payments of dental care: Methods of payments and dental insurance, government plans		2	
<b>3. Preventive Dentistry</b>		5	
i. Definition, Levels, role of individual community and profession, fluorides in dentistry, plaque control programmes.			
ii. Prevention of dental caries Prevention of periodontal disease Prevention of oral cancer Prevention of malocclusion Atraumatic Restorative Treatment(ART) Occupational Hazards Evidence Based Dentistry(EBD)		6	

<b>Research Methodology and Dental Statistics</b>	
4. Health Information: - Basic knowledge of Computers, MS Office, Window 2000, Statistical Programmes	1
5. Research Methodology: -Definition, types of research, designing a written protocol	1
6. Bio-Statistics: - Introduction, collection of data, presentation of data, Measures of Central tendency, measures of dispersion, Tests of significance, Sampling and sampling techniques-types, errors, bias, blind trail and calibration.	5
<b>Practice Management</b>	
1. Place and locality 2. Premises & layout 3. Selection of equipments 4. Maintenance of records/accounts/audit.	2

## PRACTICALS/CLINICALS/FIELD PROGRAMMES IN PUBLIC HEALTH DENTISTRY

These exercises designed to help the student in V year:

1. To Understand the community aspects of dentistry
2. To take up leadership role in solving community oral health programme
3. To gain hands on experience on research methodology.

### Exercises: IV BDS

Sl. No	Topic	Hours of study
1.	<b>Oral health education material preparation</b> <ul style="list-style-type: none"><li>• Preparation of health education materials posters,models,slides Lectures,play acting skits etc.</li></ul>	10 hours
2.	<b>Visit to school</b> <ul style="list-style-type: none"><li>• To asses the oral health status of school children, Emergency treatment and health education including possible preventive Care at school (tooth brushing technique demonstration and oral rinse programme etc.)</li></ul>	20 hours
3.	<b>Preventive dentistry and health talk:</b> <ul style="list-style-type: none"><li>• Including case history, recording of indices,application of pit and fissure Sealants,fluoride gel application procedure,A.R.T.</li></ul> Health talk:Minimum of 12 per year	30 hours
4.	<b>Exploring the setting of dental practice</b> <ul style="list-style-type: none"><li>• Exploring and planning setting of private dental clinics in rural,semi-Urban and urban locations,availment of finances for dental practices, Preparing project report.</li></ul>	10 hours
5.	<b>Rural postings</b> <ul style="list-style-type: none"><li>• Comprehensive care including oral health education in rural areas for Disadvantaged population.</li></ul>	80 hours

**Note:** Recording of oral health assessment using indices and WHO basic oral health survey methods should be in context of how information collected will be used or utilised. Therefore it is desirable for this exercise to be part of short term research project and not merely for recording.

The colleges are encouraged to involve in the N.S.S.programme for college students for carrying out Social work in rural areas.

**Type of questions and distribution of marks:**

Each question paper shall be of 3 hours duration, carrying maximum marks of 70. There shall be three types of questions with distribution of marks as shown in Table:

**Table**

Type of Questions	No. of Questions	Marks per question	Total marks
Long Essay Type	2	10	20
Short Essay Type	8	5	40
Short Answer Type	5	2	10
		<b>Grand Total</b>	<b>70</b>

**Scheme of Examination****Theory Examination**

Sl. No	Type of Question	No.	Marks	Total (Maximum Marks- 100)
I	Long Essays	2	10	20
ii	Short Essays	8	5	40
iii	Short Answers	5	2	10

**Clinical Examination**

Sl.No.	Exercise	Marks allotted (Maximum Marks- 100)
1.	Case History Taking	15
2	. Assessment of Oral Health Status using any two relevant Indices	35
3.	Preventive Clinical procedures(Any one) ( Topical fluoride application, Pit and fissure sealants and ART)	25
4	Oral Health Education Talk / Presentation of Oral Health Education Material / short term student research project presentation	15

	Theory	Clinicals
Internal Assessment	10	10
University Examination	70	90
Viva voce	20	-
<b>Total</b>	<b>100</b>	<b>100</b>

### **BOOKS RECOMMENDED & REFERENCE:**

1. Dentistry Dental Practice and Community by David F.Striffler and Brain A.Burt, Edn. -1983,W,B,Saunders Company.
2. Principles of Dental Public Health by James Morse Dunning,4<sup>th</sup> Edition, 1986, Harwarduniversity Press.
3. Jong,s Community Dental Health ,5<sup>th</sup> Edition, by George Gluck and warren Morganstein.
4. Community Oral Health- A system approach by Patricia P.Cormier and Joyee I.Levy Published by Application-Century-Crofts/New York,1881.
5. Community Dentistry- A problem oriented approach by P.C.Dental Hand book series Vol.8 by Stephen I.Silverman and Ames F.Tryon,series editor-Alvin F.Gardner, PSG Publishing company inc.littleton Massachuselts,1980.
6. Clinical Use of Fluorides- Stephen H. Wei
7. Oral healthsurveys- Basic methods,4<sup>th</sup> edition,1997,published by W.H.O.Geneva Available at the regional office New Delhi.
8. Preventive Dentistry-by J.O.Forrest published by John Wright and sons Bristol, 1980.
9. Preventive Dentistry by Murray, 1997.
10. Textbook of Preventive and Social Medicine by park, 20<sup>th</sup> edition..
11. Textbook of Preventive and Community dentistry by Dr S S Hiremath.
12. Introduction to Bio-statistics by B.K.Mahajan.
- 13.Research methodology- Methods and techniques by C.R.Kothari, 2<sup>nd</sup> edition.
- 14.Introduction to statistics methods by grewal.
15. Dentistry,Dental Practice and the community, 6<sup>th</sup> Edition, by Brain A Burt and Stephen a eklund.

## IV BDS ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS

### Course Details -IV Year B.D.S

#### TEACHING HOURS:

Mode of Teaching	IV Year B.D.S
Theory	30 Hours
Clinical	100 Hours
Total	130 Hours

#### MUST KNOW

#### IV YEAR - COURSE SYLLABUS:

Sl. No.	Subjects	Hours
1.	General Principles in Orthodontic Treatment Planning of Dental and Skeletal Malocclusions	1 Hour
2.	Anchorage in Orthodontics - Definition, Classification, Types and Stability of Anchorage	2 Hours
3.	Biomechanical Principles in Orthodontic Tooth movement a. Different types of tooth movements b. Tissue response to orthodontic force application c. Age factor in orthodontic tooth movement	2 Hours
4.	Preventive Orthodontics a. Definition b. Different procedures undertaken in preventive orthodontics and their limitations Interceptive Orthodontics a. Definition b. Different procedures undertaken in interceptive procedure c. Serial Extraction: Definition, indications, contra-indication, technique, advantages and disadvantages d. Role of muscle exercise as an interceptive orthodontics	Will Be Covered by Department of Pedodontia
5.	Corrective orthodontics a. Definition, factors to be considered during treatment planning b. Model analysis: Pont's, Ashley Howe's, Bolton, Careys, Moyer's Mixed Dentition Analysis	2 Hours

<ul style="list-style-type: none"> <li>c. Methods of gaining space in the arch: - Indications, relative merits and demerits of proximal stripping, arch expansion and extractions</li> <li>d. Extractions in Orthodontics - indications and selection of teeth for extraction</li> </ul>	
<ul style="list-style-type: none"> <li>6. Orthodontic Appliances: General <ul style="list-style-type: none"> <li>a. Requisites for orthodontic appliances</li> <li>b. Classification, indications of Removable and Functional Appliances</li> <li>c. Methods of force application</li> <li>d. Materials used in construction of various orthodontic appliances - use of stainless steel, technical considerations in curing of acrylic, Principles of welding and soldering, fluxes and antfluxes</li> <li>e. Preliminary knowledge of acid etching and direct bonding</li> </ul> </li> </ul>	2 Hours
<ul style="list-style-type: none"> <li>7. Removable Orthodontic Appliance <ul style="list-style-type: none"> <li>a. Components of removable appliances</li> <li>b. Different type of clasps and their use</li> <li>c. Different type of labial bows and their use</li> <li>d. Different types of springs and their use</li> <li>e. Expansion appliances in orthodontics <ul style="list-style-type: none"> <li>i. Principles</li> <li>ii. Indication for arch expansion</li> <li>iii. Description of expansion appliances and different types of expansion devices and their uses</li> <li>iv. Rapid maxillary expansion</li> </ul> </li> </ul> </li> </ul>	2 Hours
<ul style="list-style-type: none"> <li>8. Fixed Orthodontic Appliances <ul style="list-style-type: none"> <li>a. Definition, Indication and Contraindications</li> <li>b. Component parts and their uses</li> <li>c. Basic principles of different techniques: Edgewise, Begg straight wire</li> </ul> </li> </ul>	2 Hours
<ul style="list-style-type: none"> <li>9. Extraoral Appliances <ul style="list-style-type: none"> <li>a. Headgears</li> <li>b. Chincup</li> <li>c. Reverse pull headgears</li> </ul> </li> </ul>	1 Hour
<ul style="list-style-type: none"> <li>10. Myofunctional Appliances <ul style="list-style-type: none"> <li>a. Definition and principles</li> <li>b. Muscle exercises and their uses in orthodontics</li> <li>c. Functional appliances: <ul style="list-style-type: none"> <li>i. Activator, Oral Screens, Frankels function regulator, bionator twin blocks, lip bumper</li> <li>ii. Inclined planes - upper and lower</li> </ul> </li> </ul> </li> </ul>	3 Hours
<ul style="list-style-type: none"> <li>11. Orthodontic Management of Cleft Lip and Palate</li> </ul>	2 Hours
<ul style="list-style-type: none"> <li>12. Principles of Surgical Orthodontics <ul style="list-style-type: none"> <li>a. Maxillary Prognathism and Retrognathism</li> <li>b. Mandibular Prognathism and Retrognathism</li> </ul> </li> </ul>	2 Hours

c. Anterior open bite and deep bite d. Cross bite	
13. Principle, Differential Diagnosis and Methods of Treatment of: a. Midline diastema b. Cross bite c. Open bite d. Deep bite e. Spacing f. Crowding g. Class II - Division 1, Division 2 h. Class III - Malocclusion - True and Pseudo Class III	3 Hours
14. Retention and Relapse Definition, Need for retention, Causes of relapse, Methods of retention, Different types of retention devices, Duration of retention, Theories of retention	2 Hours
15. Ethics	1 Hour
16. Genetic in Orthodontics	1 Hour
17. Computers in Orthodontics	1 Hour
18. Adult Orthodontics in brief	1 Hour

#### **CLINICALS AND PRATICALS IN ORTHODONTICS DURING IV B.D.S - 130 Hours**

##### **CLINICAL TRAINING DURING IV B.D.S**

1. Case History Training
2. Case Discussion
3. Discussion on the given topic
4. Cephalometric tracings
  - a. Down's Analysis
  - b. Steiner's Analysis
  - c. Tweed's Analysis

##### **PRATICAL TRAINING DURING IV YEAR B.D.S**

1. Adam's Clasp on Anterior teeth Gauge 0.7mm
2. Modified Adam's Clasp on upper arch Gauge 0.7mm
3. High Labial bow with Apron spring on upper arch  
(Gauge of Labial bow - 0.9mm, Apron Spring - 0.3mm)
4. Coffin spring on upper arch Gauge 1mm
5. Appliance Construction in Acrylic
  - a. Upper and lower Hawley's Appliance
  - b. Upper Hawley's with Anterior bite plane
  - c. Upper Habit breaking Appliance

- d. Upper Hawley's with Posterior bite plane with 'Z' spring
- e. Lower inclined plane / Catalan's Appliance
- f. Upper Expansion plate with Expansion Screw
- g. Construction of Activator

**RECOMMENDED AND REFERENCE BOOKS**

1. Contemporary Orthodontics - William R Proffit
2. Orthodontics for Dental Students - White and Gradiner
3. Handbook for Dental Students - Movers
4. Orthodontics - Principles and Practice - Graber
5. Design, Construction and Use of Removable Orthodontic Appliances - C. Philip
6. Adams
7. Clinical Orthodontics: Vol 1 & 2 - Salzmann  
Orthodontics - Graber and Swine
8. Textbook of Orthodontics-III Edition, M S Rani, All India  
Publishers & Distributors, New Delhi  
Dr G V N

**SCHEME OF EXAMINATION OF B.D.S (ORTHODONTICS)**

**Total Theory Marks - 100 Marks**

Theory Written Examination -	70 Marks
Vivavoce -	20 Marks
Internal Assessment -	<u>10 Marks</u>
Total	<u>100 Marks</u>

**Theory Written Examination- 70 Marks**

Type of Questions	Marks	Total
Long Essays - 2	2 x 10	20
Short Essays - 8	8x5	40
Short Answers - 5	5x2	10
Total		70

**Clinical Examination - 100 Marks**

University Clinical Examination	90 Marks
Internal Assessment -	<u>10 Marks</u>
Total	<u>100 Marks</u>

**University Clinical Examination - 90 Marks**

Clinical Work	Marks	Total
Spotters - 10 Nos	10 x 3	30
Wire Bending - 3 Exercises a. Labial Bow - b. Adams Clasp c. Fingers Spring / Z Spring	15 Marks 15 Marks 10 Marks	40
Clinical Case Discussion		20
	<b>Total</b>	<b>90</b>

## IV BDS PEDIATRIC AND PREVENTIVE DENTISTRY

Lectures  
Theory  
IV Year: 45 Hours

Practicals/Clinics:  
IV Year: 100 Hours

### IV YEAR PEDODONTICS AND PREVENTIVE DENTISTRY: 45 HOURS

Sl. No.	Subjects	Hours
1.	Child Psychology Definition Importance of understanding child psychology in pedodontics Theories Psychological development from birth through adolescence Dental fear, anxiety and their management, types of cry Application of psychology principles in dental management Psychological disorders including anorexia, bulimia Child Abuse and Neglect	4 hours
2.	Behaviour Management Definition Classification and types of behaviour Factors influencing child behaviour Non-pharmacological management of behaviour Pharmacological management of behaviour: Pharmacological principles in pediatric dentistry-drug dosage formulae Analgesics, anti inflammatory and antibiotics commonly prescribed for children Conscious sedation including nitrous oxide-oxygen inhalation anaesthesia	5 hours
3.	Fluorides Historical background Systemic fluorides-availability, agents, concentrations, advantages and disadvantages Topical fluorides-agents, composition, methods of application both for professional and home use, advantages and disadvantages Mechanism of action and its anti cariogenic effect Fluoride toxicity and its management De fluoridation techniques	4 hours

<p>4. Pediatric Endodontics  Principles and diagnosis  Classification of pulp pathology  Management of pulpally involved primary, young permanent and permanent teeth including materials used and techniques followed  Pulp capping  Pulpotomy  Pulpectomy  Apexogenesis  Apexification</p>	4 hours
<p>5. Traumatic injuries to teeth  Definition  Classification  Etiology and incidence  Management of trauma to primary teeth  Sequelae and reaction following trauma to primary teeth  Management of trauma to young permanent teeth  Prevention of trauma: mouth protectors</p>	5 hours
<p>6. Preventive and Interceptive Orthodontics  Definitions  Problems seen during primary and mixed dentition periods and their management  Mixed dentition analysis  Serial extraction  Space management</p>	4 hours
<p>7. Oral Habits in children  Definition, classification and aetiology of all habits  Clinical features of deleterious oral habits including non-nutritive sucking, mouth breathing, non functional grinding, masochistic and occupational habits  Management of oral habits in children</p>	4 hours
<p>8. Dental management of children with special needs  Definition, classification, aetiology, clinical features, special considerations in the dental management of:  Physically handicapping conditions  Mentally handicapping conditions  Medically compromising conditions  Genetic disorders and importance of genetic counselling</p>	5 hours
<p>9. Oral surgical procedures in children  Indications and contra indications for extraction  Minor surgical procedures in children  Knowledge of local and general anaesthesia</p>	2 hours
<p>10. Preventive dentistry  Definition, principles and scope</p>	3 hours

Levels and types of prevention Preventive measures: Minimal Intervention Pit and fissure sealants Preventive resin restorations (PRR, CARR) Newer agents available for caries prevention and re mineralization Caries vaccine	
11. Nanodentistry- introduction, principles and technique -an outline	1 hour
12. Dental health education and school dental health programmes	1 hour
13. Importance of Dental Home	1 hour
14. Dental emergencies in children and their management	1 hour
15. Setting up of Paediatric dental practice including ethics	1 hour

#### **PRACTICALS / CLINICS**

1. Student is trained to arrive at proper diagnosis by following a scientific and systematic procedure of history taking and examination of orofacial region. Training is also imparted in management whenever possible.
2. In view of the above each student shall maintain a record of work done, which shall be evaluated for marks at the time of university examination.
3. The following is the minimum prescribed work:

#### **Pre-clinical (III Year)**

Drawing of individual primary teeth morphology  
Preparation of various cavity designs on typhodont teeth and extracted primary and permanent teeth  
Fabrication of habit breaking appliances  
Clinical exercises (IV Year)  
Case History Recording and Treatment Planning  
Communication and Management of child patient  
Preventive measures - oral prophylaxis, topical fluoride application  
Restoration of carious teeth using different materials  
Extraction of primary teeth

## SCHEME OF EXAMINATION

A. Theory (University written examination) 70 Marks  
Distribution of Types of Questions

Type of Questions and Marks	Marks
Long Essay - 2 x 10 Marks	20
Short Essays - 8 x 5 Marks	40
Short Answers - 2 x 5 Marks	10
Total	70

### B. Internal Assessment Theory: 10 Marks, Practicals: 10 Marks

C. Clinical: 90 Marks

1. Clinical in Pedodontics and Preventive Dentistry: 60 Marks

- a. Case History, Clinical Examination, Diagnosis and Treatment Planning: 30 Marks
- b. Clinical procedure: 40 Marks
  - i. Oral prophylaxis and topical fluoride application
  - ii. Restoration of decayed tooth
  - iii. Extraction of primary tooth
- c. Overall management of child patient and post-operative instructions: 20 Marks

### D. Viva Voce: 20 Marks

Theory - 100	
University written exam:	70
Viva Voce:	20
Internal assessment (written):	10
Total	<u>100</u>

Clinical - 100	
University exam:	90
Internal assessment (written):	10
Total:	<u>100</u>

### **BOOKS RECOMMENED**

1. Dentistry for the Child and Adolescent- Mc Donald
2. Pediatric Dentistry ( Infancy Through Adolescence)- Pinkham
3. Clinical Pedodontics- Sidney B.Finn
4. Paediatric Operative Dentistry-Kennedy
5. Behaviour Management- Wright
6. Clinical Use of Fluorides- Stephen H. Wei
7. Textbook of Pediatric Dentistry-Braham Morris
8. Primary Preventive Dentistry-Norman O Harris, Franklin Garcia-Godoy
9. Understanding of Dental Caries-Nikiforuk
10. Textbook and Color Atlas of Traumatic Injuries to the Teeth - J.O Andreason, C.M Andreason
11. Textbook of Pedodontics- Shobha Tandon
12. Handbook of Clinical Pedodontics- Kenneth D

## IV BDS PROSTHODONTICS, CROWN AND BRIDGE INCLUDING IMPLANTOLOGY

### Teaching Hours:

#### Clinical:

III year :70 hours

IV year 300 hours

#### Theory:

III year :30 hours

IV year :80 hours

### IV PROSTHODONTICS THEORY: 30 HOURS

Sl. No.	Subjects	Hours
1.	Relating the patient to the articulator Articulators - articulators based on theories of occlusion - articulators based on the type of record used for their adjustment Selection of Articulator for complete dentures - Hanau articulator - Whip mix articulator - Dentatus articulator	1 hour
2.	Selecting artificial teeth for edentulous patient Anterior tooth selection Pre extraction guides size of the anterior teeth form of the anterior teeth The dentogenic concept in selecting artificial teeth Posterior tooth selection Bucco lingual width of posterior teeth mesiodistal length of posterior teeth cervico Occlusal Length of Posterior Teeth types of posterior teeth according to materials types of posterior teeth according to cusp inclines	1 hour
3.	Preliminary Arrangement Of Artificial Teeth Guides for preliminarily arranging anterior teeth Relationship to incisive papilla factors governing the anteroposterior position of the dental arch	1 hour

<p>Setting Maxillary anterior teeth in wax for try in  Importance of proper Anteroposterior positioning of the anterior teeth  Setting mandibular anterior teeth in the wax for try in  Horizontal overlap  Preliminary arrangement of Posterior teeth  Orientation of occlusal plane  tentative buccolingual position of the posterior teeth  tentative arch form of the posterior teeth  Setting posterior teeth for try in  guidelines for centric occlusion  esthetics and leverage</p>	
<p>4. Perfection and verification of jaw relation records  Verifying Vertical Dimension  Verifying the centric relation  Intraoral observation of intercuspatation .  Intraoral interocclusal records  Extra oral articulator method  Creating Facial And Functional Harmony With Anterior Teeth  Anatomy of natural appearance and facial expression  normal facial landmarks  maintaining facial support and neuromuscular balance  Basic guides to developing facial and functional harmony  preliminary selection of the artificial teeth  horizontal orientation of the anterior teeth  vertical orientation of the anterior teeth  phonetics in the orientation of the anterior teeth  inclination of the anterior teeth  harmony in the general composition of anterior teeth  refinement of individual tooth positions  concept of harmony with sex personality and age of the patient  correlating esthetics and incisal guidance  Patient acceptance of arrangement of anterior teeth</p>	1 hour
<p>5. Completion of the try in : Eccentric Jaw relation adjustment,  establishing the posterior palatal seal  Protrusive and lateral relations  Controlling factors of movement  Eccentric relation records  Establishing the posterior palatal seal  Arranging posterior teeth for functional harmony  Importance of occlusion  Maintenance of the arches  Maintenance of occlusal harmony  differences in artificial occlusion and natural occlusion  rational for arranging posterior teeth in Temporomandibular joint disturbances  Factors of Centric occlusion  Critical components in arranging posterior teeth  Laws protrusive occlusion</p>	2 hours

<p>Laws of lateral occlusion Occlusal schemes used in complete dentures for the edentulous patients</p> <ul style="list-style-type: none"> <li>- Anatomic teeth</li> <li>- Non anatomic teeth</li> <li>- Other tooth forms</li> </ul> <p>Techniques for arranging cusped teeth in Balanced occlusion techniques for arranging cusplless teeth in occlusion.</p> <p><b>Appearance and Functional Harmony of Denture Bases</b> materials used for denture bases</p> <ul style="list-style-type: none"> <li>- Acrylic Resin</li> <li>- Metal</li> </ul> <p>formation and preparation of the mold packing the mold preserving the orientation relations construction of remounting casts completing the rehabilitation of the patient dentists evaluations patients evaluations friends evaluations elimination of basal surface errors errors in occlusion interocclusal records for remounting dentures interocclusal record of centric relation remounting the mandibular denture verifying centric relation Phonetics - Production of voice and Articulation of sounds Position of teeth and phonetics Neutral, Zone, Relief Processing errors - Reasons and care Selective grinding Remount and correction of occlusal discrepancies Prosthesis - Insertion</p>	
<p><b>6. Patient instructions , after care and recall and management of patient complaints</b></p> <p>protrusive inter occlusal record alternative use of plaster inter occlusal records advantages of balanced occlusion in complete dentures special instructions to the patient</p> <ul style="list-style-type: none"> <li>- individuality of patients</li> <li>- appearance with new dentures</li> <li>- mastication with new dentures</li> <li>- speaking with new dentures</li> <li>- oral hygiene with dentures</li> </ul> <p>Maintaining the comfort and health of the oral cavity in a rehabilitated edentulous patient Post Insertion Adjustments</p> <ul style="list-style-type: none"> <li>- adjustments relaxed to the occlusion</li> <li>- adjustments relaxed to the Denture bases</li> <li>- subsequent oral examinations and treatments</li> </ul>	<p>1 hour</p>

<p><b>7. Rehabilitation of the partially edentulous patients (overdentures)</b>  tooth-supported complete dentures  - indications and contraindications for over dentures  - selection of abutment teeth  - clinical procedures</p>	1 hour
<p><b>8. Immediate Denture Treatment</b>  - indication for immediate dentures  - contraindications to immediate denture service  - delayed and transitional dentures  - treatment planning  - clinical procedures  - waxing and flasking  - preparation of the surgical template  - processing occlusal correcting, and final preparation of the immediate dentures  - surgery and the insertion of the dentures  - postoperative patient instructions  - perfecting the occlusion  - subsequent service for immediate dentures  <b>Single complete dentures opposing natural teeth</b>  - maxillary single dentures  - clinical and laboratory procedures  - subsequent problems with single dentures against natural teeth  - mandibular single dentures  - supplemental prosthodontic procedures for the edentulous patient</p>	2 hours
<p><b>9. Relining or Rebasing of Complete Dentures</b>  - treatment rationale  - diagnosis  - clinical procedures  Static impression technique closed and open mouth relines/rebases  - functional impression technique  - chair side technique  <b>Repair of Complete Dentures And Duplication Of Casts</b>  - Maxillary and mandibular fracture repair  - repairs using cold-curing resin  - duplication of casts  - reversible hydrocolloid technique  - irreversible hydrocolloid technique</p>	2 hours
<p><b>10. Osteo Integrated Supported Prosthesis (Dental Implants)</b>  For The Edentulous Patient  - maladaptive denture behavior  - use of dental implants  - patient considerations  - tissue integration in the edentulous patient  Management of japer-plastic ridges  - Atrophied flat mandibular ridges in complete denture prosthesis therapy</p>	1 hour

Geriatric Dentistry: Management of aged, senior citizens, physically, mentally handicapped patients	
<b>REMOVABLE PARTIAL DENTURE PROSTHESIS</b>	
<b>11. 1.</b> Introduction and scope 2. Terminology 3. Classifications 4. Examination. diagnosis and treatment planning 5. Components of removable partial dentures and their functions	3 hours
<b>12. Major connectors</b> Mandibular Major connectors Maxillary Major connectors	2 hours
<b>13. Minor connectors</b> Functions Form and location Tissue stops Finishing lines. reaction of tissues to metallic coverage form of occlusal rests and rest seats	1 hour
<b>14. Rests and rest seats</b> Interproximal occlusal rest seats Internal occlusal rests Incisal rests and rest seats Lingual rests on canines and incisor teeth Possible movements of partial denture Support for rests	1 hour
<b>15. Direct retainers</b> Internal attachments Extra coronal direct retainers Relative uniformity of retention Criteria for selecting a given clasp design Basic principles of clasp design Designs of clasps	3 hours
<b>16. Indirect retainers</b> Denture rotation about an axis Factors influencing effectiveness of indirect retainers Auxiliary functions of indirect retainers Forms of indirect retainers Auxiliary occlusal rests Canine extensions from occlusal rests Canine rests Continuous bar retainers and lingual plates	2 hours

<p>Modification areas  Rugae support  Direct indirect retention  Denture base considerations  Tooth supported partial denture base</p>	
<p><b>17. Distal extension partial denture base:</b>  Functions of denture bases  Methods of attaching denture bases  Ideal denture base material  Advantages of metal bases  Methods of attaching artificial teeth  Need for relining</p>	1 hour
<p><b>18. Impression materials and procedures for removable partial dentures</b>  Rigid materials  thermoplastic materials  elastic materials  impressions of the partially edentulous arch  individual impression trays  support for distal extension removable partial dentures  - factors influencing the support of distal extension bases  method for obtaining functional support for distal extension base</p>	3 hours
<p><b>19. Surveying</b>  Description of a dental surveyor  Purposes of a surveyor  Factors that determine path of placement and removal  Step by step procedures in surveying a diagnostic cast  Final path of placement  Recording relation of cast to surveyor  Surveying the master cast  Measuring retention and balancing of retention  Influence of survey line in designing of clasps  Blocking out the master cast  Relieving the master cast  Paralleled block out. shaped block out, arbitrary block out and relief  Preparation of the mouth for removable partial denture  Oral surgical preparation  Conditioning of abused and irritated tissues  Periodontal preparation  Periodontal diagnosis and treatment planning  Initial disease control therapy  Definitive periodontal therapy</p>	3 hours

<p>Recall and maintenance  Advantages of periodontal therapy  Preparation of abutment teeth  Classification of abutment teeth  Sequence of abutment preparation on sound enamel  Abutment preparation using conservative restorations  Abutment preparation using crowns  Splinting of abutment teeth  Use of isolated teeth as abutment  Missing anterior teeth  Temporary crowns when a partial denture is being worn  Fabricating restorations to fit existing denture retainers</p>	
<p><b>20 Occlusal relationship for removable partial denture</b>  difference in natural and artificial occlusion  desirable occlusal contact relationship for removable partial denture  method for establishing occlusal relationship  materials for artificial posterior teeth  establishing jaw relation for mandibular removable partial denture opposing a maxillary complete denture  labatory procedures  duplicating a stone cast  waxing the partial denture framework  anatomic replica pattern  spruing, investing, burnout, casting and finishing of the partial denture framework  making record base  occlusal rims  making a stone occlusal template from a functional occlusal record  arranging posterior teeth to an opposing cast  types of anterior teeth  waxing &amp; investing the partial denture before processing the acrylic resin base  processing the denture  remounting and occlusal corrections to an occlusal template  polishing the denture  <b>work authorization for removable partial denture</b>  work authorization  definitive instructions by work authorization  Legal aspects of work authorization  Relining and rebasing the removable partial denture  Relining tooth support - supported denture base  Relining distal extension denture base  Method of reestablishing occlusion of a relined partial denture</p>	<p>3 hours</p>
<p><b>21. Stress breakers</b>  Types of stress breakers  Advantages of stress breakers  Disadvantages of stress breakers  Advantages of a rigid design  Disadvantages of a rigid design  Stress breaking principles  Principles of removable partial denture design  Biomechanical considerations  Other factors influencing  Differentiation between two main types of removable partial dentures  Essentials of partial denture design  Components of partial denture design  Additional considerations influencing design</p>	<p>1 hour</p>

<p><b>22. Repair and additions to removable partial denture</b>  Broken clasp arms  Fractured occlusal rests  Distortion or breakage of other components  Loss of teeth not involved in the support or retention of the restoration  Loss of an abutment tooth necessitating its replacement and making a new direct retainer  Other types of repair  Repair by soldering</p>	<p>2 hours</p>
<p><b>23. Temporary removable partial denture</b>  Appearance  Space maintenance  Reestablishing occlusal relationships  Conditioning teeth and residual ridge  Conditioning the patient for wearing a prosthesis</p>	<p>2 hours</p>
<p><b>24. Removable partial denture considerations</b>  in maxillofacial prosthodontics - 1  Maxillofacial Prosthodontics  Intraoral prosthesis design considerations  Maxillary prosthesis  Mandibular prosthesis  Treatment planning  Framework design  Class I resections  Class II resections  Mandibular flange prosthesis</p>	<p>1 hour</p>
<p><b>ELEMENTS OF FIXED PROSTHODONTICS (CROWN AND BRIDGE PROSTHESIS)</b></p>	
<p><b>25. Introduction and definitions.</b>  Terminologies  Indication and contraindications</p>	<p>2 hours</p>

<b>26. Examination, diagnosis and treatment planning and radiological interpretations.</b>	1 hour
<b>27. Selection and choice of abutment teeth</b>	1 hour
<b>28. Biomechanical principles of tooth preparation</b> Preservation of tooth structure Retention and resistance form Structural durability of the restoration Marginal integrity Preservation of the periodontium Finish lines and the periodontium Occlusal bevels Flares Gingival finish lines Preservation of the periodontium <b>Instrumentation</b> Water air cooling Armamentarium	3 hours
<b>29. Full veneer crowns</b> Maxillary and mandibular posterior three quarter crowns Anterior three quarter crown Pin modified three quarter crowns Seven eighths crown Proximal half crowns Inlay MOD onlay	3 hours
<b>30. Anterior/ posterior porcelain fused to metal crowns</b> All ceramic crowns Preparation modifications for damaged teeth Modifications for damaged vital teeth Conversion of defects into retentive features Solution to common problems	3 hours
<b>31. Endodontically treated tooth</b> Preparation modifications for special situations Preparation for fixed bridge abutment Preparation for removable partial denture abutments	3 hours
<b>32. Isolation of working field and temporary protections of prepared tooth</b> <b>Gingival retractions and impression procedures.</b> Construction of DIES of working models, direct and indirect technique. Techniques of fabrication of retainers and materials used, its application with reference to esthetics.	3 hours
<b>33. Selection and fabrication of pontics and esthetics.</b> Connectors, stress - breakers and assembly of fixed bridges.	3 hours

<p><b>Finishing, cementing and maintenance of crowns and bridges</b> Laser and high speed.</p>	
<p><b>IMPLANTS</b></p>	
<p>34. Osseo integrated - Supported prosthesis. Introduction and scope advantages and disadvantages. Classification Applied material science, patient Evaluation pre-surgical preparation treatment plan, applied Linical, surgical and Laboratory Procedure . Osseointegrated supporting prosthesis occlusion, esthetics, insertion and maintenance. Examination, diagnosis and treatment planning and other clinical and Laboratory procedures</p>	5 hours
<p>35. Maxillofacial Prosthesis Restoration of congenital and acquired oral and para-oral Defects. (Facial Prostheses, including implant support Maxillo Facial prosthesis). Splints Obturator Carriers Bruxism and management of occlusal attrition</p>	5 hours
<p>36. Miscellaneous Patient and practice management in Prosthodontic clinic Ethics, Law, Jurisprudence an Forensic Odontology - in Prosthodontic practice Assistants - Laboratories and clinic Communication methods - Technician work Authorization, methods and legality</p>	5 hours
<p>37. Emergencies in Prosthodontics During impression recording in Partially, Completely Edentulous Situation and Maxillofacial Defects. Precautions and management of traumatic accidents in tooth preparation use vasoconstrictor in anaesthetic solutions and retraction cords. ill fitting dentures Broken clasps, facings Broken prosthesis Swallowing Prosthesis General Management of elderly and C.V.S. and immuno compromised patients.</p>	2 hours

## CLINICAL ASSIGNMENTS

### III & IV BDS

1. Treatment for completely edentulous patients- 3 Patients
2. Treatment for Partially Edentulous Patients  
- Provisional R.P - 5.D  
(Minimum one for each Kennedy's classification)
3. F.P - preparation of crown - anterior and posterior, one each.D.
4. Relining & Rebasing, Repair - 1 each.
5. Immediate denture - 1
6. Single denture -1

### Demonstrations of Clinical and Laboratory procedures for :

3- Unit Fixed Partial Denture, Maxillofacial prosthesis, Obturators and implant supported prosthesis.

### SCHEME OF EXAMINATION

- a. **THEORY**(university written examination) 70 marks  
Distribution of topics and types of questions.

Contents	Type of questions & marks	Marks
One long essay from complete denture One long essay from removable partial denture/fixed partial denture	Long essays 2x10 marks	20
3 short essays from complete denture 3 short essays from removable partial denture 2 short essays from fixed partial denture	Short essays 8x5 marks	40
2 short answers from complete denture 1 short answer from removable partial denture 2 short answers from fixed partial denture	Short answer 2x5 marks	10
	<b>Total</b>	<b>70</b>

**B. Internal assessment theory: 10 marks, practicals:10 marks.**

**C. CLINICALS:90 marks**

- i. Case history 10 marks
- ii. Complete denture exercise 50 marks
- iii. RPD Designing or Tooth Preparation on Typhodont- 20 Marks

**D. Viva-voce 20 marks**

Theory- 100  
 University written exam- 70  
 Viva-voce- 20  
 Internal assessment (written)-10  
 Total- 100  
 Clinical-100  
 University exam-90  
 Internal assessment(written) 10  
 Total- 100

**TEXT BOOKS AND REFERENCE BOOKS**

	Author	Name of the Book & Title	Edn.	Yr. of Publ	Publisher's name
1.	Boucher	Prosthodontic Treatment of Edentulous Patients	XI	1997	Mosby St. Louis, Missouri, USA
2.	Heartwell	Syllabus of Complete Denture	IV	1992	Varghese Publishing House Hind Rajasthan Building Bombay, India
3.	Rosenstiel	Contemporary Fixed Prosthodontics	III	2001	Mosby, St. Louis, Missouri, USA
4.	Sharry	Complete Denture Prosthetics	---	---	---
5.	Shillingburg	Fundamentals of Tooth Preparation	I	1987	Quintessence Publications 551 North Kimberly Drive, Carol Stream, IL-60188-1881
6.	Tylman	Theory and practice of Fixed Prosthodontics	VIII	1993	Ishiyaku EuroAmerica, Inc .. 716, Hanley Industrial Court, St. Louis Missouri, USA

7	Jhonston	Modern practice in Fixed Prosthodontics	---	---	---
8.	Mc Giveney Glen P	MC Cracken's removable Partial Prosthodontics	9th	1995	Mosby
9.	Shillingburg	Fundamentals of Fixed Prosthodontics	III	1997	Quintessence Publications 551, North Kimberly Drive, Carol Street, IL
10.	Stewart	Clinical Removable Partial Prosthodontics	II	1997	All India Publishers & Distributors
11.	Skinner	Science of Dental Materials	X	1996	W.B. Saunders Company, Philadelphia, USA
12.	Craig	Dental Materials, Properties & Manipulation	VI	1996	Mosby, St. Louis Missouri, USA
13.	Combe	Notes on Dental Materials	VI	1992	Churchill Living stone, NY, USA
14.	Carl Misch	Contemporary Implant Dentistry	---	---	---
15.	Branemark	Tissue Integrated Prosthesis	---	---	---
16.	Bernard G. N. Smith	Dental Crowns and Bridges: Design and preparation	---	1986	---
17.	A.A. Grant / W Johnson	Removable Denture Prosthodontics	2nd	--	---
18.	Dr. Sybille K. Leehner, Prof. A. Roy, Mc Gregor	Removable Partial Prosthodontics	2nd	--	---
19.	Grant Heath Mc Cord	Complete Denture	---	---	Wolfe Publishing Europe
20.	George F. Kantorowicz	A Clinical Handbook Inlays, Crowns and Bridges	---	---	Indian Edition by Varghese Company
21.	Bengt 'O' wall Arud F. Kayser	Prosthodontics	---	---	Mosby - Wolfe
22.	Gunnar E. Carlsson	Principles and Management Strategies	---	---	Mosby - Wolfe

## IV Year - BDS

### CONSERVATIVE TOPICS - 80 hours

<b>1. Casts restorations</b> Indications, contraindications, advantages and disadvantages Materials used Class II cavity preparation for inlays Types of bevels in cast restoration Differences in tooth preparation for amalgam and cast restorations Fabrication of wax patterns	3 hours
<b>2. Casting</b> Die materials and preparation of dies Refractory materials Alloys used for casting Casting machines Casting procedure and defects cementation of restoration	2 hours
<b>3. Temporisation or interim restoration</b> Materials and procedure	1 hours
<b>4. Esthetics in dentistry</b> Introduction and scope Anatomy and physiology of smile Role of colour and translucency Esthetic recontouring Alteration of tooth form, shape, size and colour Management of discoloured teeth	4 hours
<b>5. Composite restorations</b> Recent advances in posterior composite resins. Indications, contraindications, advantages and disadvantages Clinical technique for posterior direct composite restorations Finishing and polishing of composite restoration Indirect posterior composite restoration	3 hours
<b>6. Non carious destruction of tooth structure -</b> Definition, etiology, diagnosis, clinical features and management	2 hours
<b>7. Ceramic Restorations</b> Recent advances in ceramic materials & techniques including CAD/CAM (in brief) Ceramic laminates, inlays, onlays and crowns. Indications, contraindications, advantages, disadvantages and techniques (in brief)	3 hours
<b>8. Direct Filling gold Restorations :</b> Introduction Types of direct filling gold, indications contraindications advantages disadvantages tooth preparation and restoration	1 hours

**ENDODONTIC TOPICS - 28 hours**

<p><b>1. Emergency endodontic procedures</b></p>	<p>2 hours</p>
<p><b>2. Internal anatomy of pulp space</b>                  Root canal anatomy of maxillary and mandibular teeth. Classification of canal configuration and variations in pulp space</p>	<p>2 hours</p>
<p><b>3. Access cavity preparation</b>                  Objectives                  Principles                  Instruments used                  Sequential steps of access cavity preparation for individual tooth</p>	<p>2 hours</p>
<p><b>4. Preparation of root canal space .</b>                  a. Determination of working length definition and methods of determining working length                  b. cleaning and shaping of root canals                  objectives                  principles                  instruments used                  techniques-hand and rotary</p>	<p>2 hours</p>
<p><b>5. Disinfection of root canal space</b>                  a. irrigation Introduction                  Function of irrigants                  Methods and techniques of irrigation                  b. intracanal medicaments                  functions                  requirements                  types                  method of placement and limitations</p>	<p>2hours</p>
<p><b>6. Problems during cleaning and shaping of root canal spaces.</b>                  Perforation and its management.                  Broken instruments and its management,                  management of curved root canals.</p>	<p>2 hours</p>
<p><b>7. Obturation of the root canal system.</b>                  a. Materials-                  Ideal root canal filling material, classification of materials                  b. Obturation techniques Classification and procedure</p>	<p>2 hours</p>
<p><b>8. Root canal sealers.</b>                  Ideal properties                  classification.,functions                  Manipulation and application of root canal sealers</p>	<p>2 hours</p>

<b>9. Post endodontic restoration</b> Principles of post endodontic Restorations Post and core-materials and procedure (in brief)	2hours
<b>10. Smear layer and its importance in endodontics and conservative treatment</b>	1 hour
<b>11. Traumatized teeth</b> Classification of fractured teeth. Management of fractured tooth.	2 hours
<b>12. Endodontic surgeries</b> indication contraindications, pre operative preparation. surgical instruments and techniques apicectomy, retrograde filling, post operative sequale, trephination, hemisection, radisectomy reimplantation (both intentional and accidental)	3 hours
<b>13. Root resorption</b> Etiology and management	1 hour
<b>14. Use of specialized equipments like Lasers and microscopes in conservative dentistry and endodontics</b>	1hour

### CLINICAL EXERCISES

1. Case history recording, diagnosis and treatment planning.
2. Clinical examination and use of various diagnostic aids
3. Pit and fissure sealants -10
4. Pulp Capping-10
5. Glass ionomer restorations-10
6. Composite restorations in anterior teeth-10
7. Composite restorations in posterior teeth-10
8. CLASS I Amalgam restorations-10
9. CLASS II Amalgam restoration-10
10. Rootcanal treatment for Anterior teeth- 2

### Demonstration:

1. Cast inlay restoration
2. Post core restoration
3. Molar endodontic treatment
4. Peri apical surgery
5. Esthetic restorative procedures

- Bleaching of teeth
  - Veneers
  - Diastema closures etc..
6. Tooth coloured inlays, onlays, crowns.

**Scheme of Examination**

**A. Theory : 70 Marks**

Distribution of Topic and Type of Questions

Contents	Type of questions and marks	Marks
One long essay from conservative topics One long essay from endodontics topics	Long essay- 10x2=20	20
Five questions from conservative topics including aesthetic dentistry Three questions from endodontics topics	Short essay 08x 5=40	40
Three questions from conservative topics including esthetic dentistry Two questions from endodontics topics	Short answer 5x2=10	10
	Total	70

**B. VIVA VOICE= 20 MARKS**

**C. INTERNAL ASSESMENT -THEORY :10MARKS, PRACTICALS :10 MARKS**

**D. PRACTICAL EXERCISE:90 MARKS**

1. Preparation of class 2 cavity for amalgam and restoration  
Or
2. Anterior composite restoration  
Or
3. Root canal treatment for anterior tooth up to selection of master cone

**Details of marks distribution of the practical examinations**

1. Class II amalgam restoration
  - a. Case history recording, examination, diagnosis and treatment planning - 15marks
  - b. Cavity preparation - 30 marks
  - c. Lining and matrix - 15 marks
  - d. Restoration and finishing - 30 marks
  - Total - 90 marks
  
2. Anterior composite restoration
  - a. Case history recording, examination, diagnosis and treatment planning - 15marks
  - b. Tooth preparation, shade selection and isolation - 35 marks
  - c. Restoration and finishing - 40 marks
  - Total - 90 marks

3. Anterior RCT	
a. Case history recording, examination, diagnosis and treatment planning	- 20marks
b. Access cavity preparation	- 25marks
c. Working length	- 20 marks
d. Chemomechanical preparation and master cone selection	- <u>25marks</u>
Total	- <u>90 marks</u>

## IV BDS ORAL AND MAXILLOFACIAL SURGERY

IV year BDS Theory: 50 hours

1.	Dento-alveolar surgery	Trans alveolar extraction Impacted teeth: General factors, incidence, etiology Classification and indications Assesment: clinical & radiological Anaesthetic considerations Surgical procedure Impacted maxillary third molar & Impacted Canine	1 hour 4 hours
2.	Endodontic surgery	Introduction, classification, apicectomy, replantation	
3.	Infections of the oral cavity	Introduction, microbiology, anatomy of fascial spaces, course of odontogenic infections, Spread of infection, classification, clinical features, management Dentoalveolar abscess, ludwigs angina osteomyelitis and ORN.  Hepatitis B and HIV	4 hours
4.	Cystic lesions of jaws	Definition, classification and pathogenesis Diagnosis, clinical features, radiological, aspiration biopsy, use of contrastmedia and histopathology Management-types of surgical procedures, and complications	3 hours
5.	Oral Implantology	Principles of implantology	2 hours
6.	Ethics		1 hour
7.	Preprosthetic surgery	Introduction, aims, classification Corrective procedures - hard & soft tissues Ridge extension and augmentation procedures	2 hours
8.	Diseases of maxillary Sinus	Surgical anatomy, Acute & chronic sinusitis	1 hour
		Oro antral fistula & Surgical approach for sinus	1 hour

9.	TMJ disorders	Surgical anatomy	1 hour
		Subluxation & Dislocation	1 hour
		Ankylosis	1 hour
		Myofunctional pain dysfunction syndrome	1 hour
		Internal derangement & Arthritis and other disorders	1 hour
10.	Tumors of the oral Cavity	General considerations, Carcinoma of oral cavity, TNM classification	1 hour
		Non odontogenic benign tumors - lipoma, fibroma, papilloma, ossifying fibroma, myoma etc	1 hour
		Ameloblastoma	1 hour
		Biopsy - types	1 hour
		Outline of management of squamous cell carcinoma, surgery, radiotherapy, chemotherapy.	1 hour
11.	Fractures of the jaws	General consideration, types of the fractures, etiology, C/F, and general principles. Dento-alveolar #methods of management	1 hour
		Mandibular Fractures – Applied Anatomy, Classification Diagnosis – Clinical and Radiological Features	1 hour
		Management -# of condyle - aetiology, classification, clinical features and general principles of management reduction and fixation	1 hour
		Fractures of middle third of the face, Definition of midface , applied surgical anatomy, classification, clinical features and outline of management	2 hour
		Orbital fractures & # of Zygomatic complex	1 hour
		Classification, C/F, indications for treatment, various methods of reduction and fixation.	2 hour
		Complications - delayed union, non-union and malunion.	1 hour
12.	Developmental deformities	Basic forms, prognathism, retrognathism and open bite. Reasons for correction, Outline of surgical methods carried out on maxilla and mandible	4 hour

13.	Salivary gland diseases	Salivary calculi and Infections of the salivary glands its management	1 hour
		Tumours of the salivary gland and management	1 hour
14.	Neurological disorders	Trigeminal neuralgia - definition, etiology , C/F and methods of management including surgery. Glossopharyngeal and Facial paralysis - etiology , clinical features	1 hour
		Nerve injuries - classification, neurohaphy etc.	1 hour
15.	Cleft lip and cleft palate	Etiology, of the clefts, incidence, classifications role of dental surgeon in the management of cleft patients. Outline of the closure procedures.	4 hour

### PRACTICAL AND CLINICALS: 200 HOURS

#### STUDENTS ARE REQUIRED TO LEARN THE FOLLOWING EXERCISES:

Case history taking  
Examination of the patient  
Recording blood pressure  
Use of different instruments in Oral & Maxillofacial surgery  
Various local anaesthetic injection techniques on patients  
Extraction of mobile and firm teeth  
Trans-alveolar extraction of root stumps  
Surgical removal of Simple impacted teeth  
Management of dento-alveolar fractures with arch bar fixation, eyelets and inter-maxillary fixations.  
Training in basic life support skills.

#### PRACTICAL AND CLINICALS QUOTA

Year	Clinical exercises	Quota	Category
IV year BDS			
	Extraction of mobile and firm teeth	60 cases	must do
	Trans-alveolar method of extraction with suturing	10 cases	must do
	Surgical removal of Simple impactions	5 cases	Desirable to do
	Management of dento-alveolar fractures with arch bar fixation, eyelets and inter-maxillary fixations	5 cases	Desirable to do
	IM & IV Injection techniques	5 cases	Desirable to do
	Assisting major surgical procedures under general anaesthesia	5 cases	Desirable to do
	Training in Handling medical emergencies, CPR and basic life support		must do

**SCHEME OF EXAMINATION**

**A. THEORY (UNIVERSITY WRITTEN EXAMINATION)**

**70 MARKS**

**DISTRIBUTION OF TOPICS AND TYPES OF QUESTIONS**

Contents	Type of questions and marks	Marks
a. 1 Question from Local anaesthesia b. 1 Question from Oral surgery	Long Essays 2 x 10 marks	20
a. 5 Questions from Oral surgery b. 1 Question from General anaesthesia	Short Essays 6 x 5 marks	30
a. 9 Questions from Oral surgery b. 1 Question from Local anaesthesia	Short Answers 2 x 10	20
Local Anaesthesia		
Total		70

**B. Internal Assessment-**

Theory: 10 marks,  
Clinicals: 10 marks

**C. Clinicals:**

**90 Marks**

I. Clinicals in Oral Surgery:  
90 Marks (Extraction of firm tooth)

30 Marks  
30 Marks  
30 Marks

- A. Case History
- B. Local anaesthesia technique
- C. Extraction of firm tooth  
( Maxillary/ Mandibular tooth) and  
management of the patient

**D. Viva Voce**

**20 Marks**

Theory-100 marks  
University written exam :  
Viva Voce:  
Internal assessment:  
Total

70  
20  
10  
100

Clinical:100 marks.  
University exam:  
Internal assessment  
Total

90  
10  
100

# SECTION V

SECTION

## ETHICS IN DENTISTRY

### Introduction

There is a definite shift now from the traditional patient and doctor relationship and delivery of dental care. With the advances in science and technology and the increasing needs of the patient, their families and community, there is a concern for the health of the community as a whole. There is a shift to greater accountability to the society. Dental specialists like the other health professionals are confronted with many ethical problems. It is therefore absolutely necessary for each and every one in the health care delivery to prepare themselves to deal with these problems. To accomplish this and develop human values, it is desired that all the trainees undergo ethical sensitization by lectures or discussion on ethical issues, discussion of cases with an important ethical component.

### Course content:

#### Introduction to Ethics

- What is ethics?
- What are values and norms?
- How to form a value system in one's personal and professional life?
- Hippocratic oath.
- Declaration of Helsinki, WHO declaration of Geneva, International code of ethics, D.C.I. Code of ethics.

#### Ethics of the Individual

The patient as a person  
Right to be respected  
Truth and confidentiality  
Autonomy of decision  
Doctor Patient relationship

#### Professional Ethics

Code of conduct  
Contract and confidentiality  
Charging of fees, fee splitting  
Prescription of drugs  
Over-investigating the patient  
Malpractice and negligence

**Research Ethics:**

Animal and experimental research/humanness  
Human experimentation  
Human volunteer research-informed consent  
Drug trials

Ethical workshop of cases  
Gathering all scientific factors  
Gathering all value factors  
Identifying areas of value-conflict, setting of priorities  
Working out criteria towards decisions

**Recommended Reading:**

Francis C.M., Medical Ethics, I Ed. 1993, Jaypee Brothers, New Delhi p.189.