I BDS

Human Oral and Dental Anatomy, Embryology, Physiology and Histology

Theory - 105 Hrs.

I. DENTAL ANATOMY:	4 2 9 1
1. Introduction, Dental Anthropology & Comparative Dental Anatomy	
2. Function of teeth.	SI.No. 1 To 4 - 3 HRS.
3. Nomenclature.	TINO.
Tooth numbering systems (Different system) (Dental formula).	
 Chronology of deciduous and permanent teeth. (First evidence of calcification, crown completion, eruption and root completion). 	2 Hrs
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. 	8 Hrs.
 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 intercusp relations of all the teeth during the various functional mandibular movements. PRINCIE	AL AL

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PULP: Anatomy, structural features, functions, pulp organs. - Developments. - Clinical consideration - Age changes.	5 hrs.
CEMENIUM: - Physical characteristics, chemical properties, structure Cementogenesis Clinical consideration - Age changes.	5 hrs.
PERIODONTAL LIGAMENT: - Cells and fibers - Functions - Development - Clinical Considerations Age Changes	5 hrs.
ALVEOLAR BONE: - Physical characteristics, chemical properties structure. - Structure - Development. - Internal reconstruction. - Clinical consideration.	5 hrs.
HISTOCHEMISTRY OF ORAL TISSUES. (Tissue processing) THEORIES OF ERUPTION AND SHEDDING. (Physiological tooth movement)	4 Hrs. 4 Hrs.

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

DENTAL ANATOMY:					
Carving on wax blocks:-					
a. Cube, rectangle, cone and cylinder					
b. Individual tooth - Only permanent teeth of both arches.					
- Central, Incisors, Lateral, Canines, Premolars and 1s	t molar.		2 1	140	
HISTOLOGY:		48	2		U
List of Histology slides:					
Development of tooth:					
 Bud stage of tooth development. 					
Cap stage of tooth development.					
3. Early bell stage of tooth development.					
4. Late Bell stage of tooth development.					
5. Root formation.					
ENAMEL:					
1. Enamel rod.					
2. Hunter-Schreger Bands					
3. Tufts, Lamellae, Spindles.					
4. Incremental lines of Retzius.					
5. Neonatal line.					
6. Gnarled Enamel.					
DENTIN:			81		
 Dentino - Enamel junction. 					
Dentinal Tubules.					
3. Incremental lines of Von Ebner.					
4. Contour lines of owen.					
5. Neonatal line.					
Tomes granular layer. Interglobular Dentin.	2				
8. Secondary Dentin.	r ^a				
9. Intratubular Dentin.					
10. Intertubular Dentin.					
11. Dead Tracts					
12. Tertiary Dentin					.E =
13. Sclerotic Dentin					
CEMENTUM:					
Cellular cementum.					
Acellular cementum.					

2. Compare annual invalidad		
3. Cemento enamel junction		4
- Type 1 - 60% type - Overlapping.		
- Type 2 - 30% type - Butt		
- Type 3 - 10% type - GAP type		
Sharpey's fibers.		
Hypercemntosis.		
6. Cementum		
PULP:		
1. Zones of Pulp.		
2. Pulp stones.		
PERIODONTAL PRINCIPAL LIGAMENT:	2 21 1035	
Principal fibers of Periodontal ligament		
- Apical, Horizontal, Oblique, Aveolar crest, Interradic	ular Transportal	
Aveolar crest, interraurc	uiai, iraiisepiai	
ALVEOLAR BONE:		
 Haversian system. 		2
Trabeculated bone.		
Mature and immature bone.		±2 (H)
CALIWARY OF ANDO-	<u> </u>	
SALIVARY GLANDS:		
1. Mucous gland.	9	
2. Serous gland.		
3. Mixed gland.		
MAXICILLARY SINUS:		39
Sinus lining (Pseudostratified ciliated columnar)		\$i
*(Desirable to know)		= ,
(Coordano to Know)		
ORAL MUCOUS MEMBRANE:		
 Parakeratinised epithelium. 		
Orthokeratinised epithelium.	4.1	
Palate - Anterolateral zone.		
4. Palate - Posterolateral zone.		
Alveolar mucosa.		
6. Vermilion border of lip.		
7. Tongue - Circumvallate Papillae.	*	
- Fungiform Papillae		u a esta "
- Filiform Papillae		1 1 1 1 N ×
8. Dentogingival junction.		
9. Skin		
2. 2001		
Gempero Mandibular Joint (T.M.J.):		1 1
Histological section (Desirable to know).		7,
,		

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3. Cemento enamel junction - Type 1 - 60% type - Overlapping. - Type 2 - 30% type - Butt - Type 3 - 10% type - GAP type 4. Sharpey's fibers.	
5. Hypercemntosis. 6. Cementum	
PULP:	
 Zones of Pulp. Pulp stones. 	#
PERIODONTAL PRINCIPAL LIGAMENT: 1. Principal fibers of Periodontal ligament	
- Apical, Horizontal, Oblique, Aveolar crest, Interradicular, Transeptal	
ALVEOLAR BONE:	a a a a a a
Haversian system.	
 Trabeculated bone. Mature and immature bone. 	a a
SALIVARY GLANDS:	1
1. Mucous gland.	
 Serous gland. Mixed gland. 	
MAXICILLARY SINUS: Sinus lining (Pseudostratified ciliated columnar)	
(Desirable to know)	
ORAL MUCOUS MEMBRANE:	5 191
Parakeratinised epithelium. Orthokeratinised epithelium.	, at 12
Ortnokeratinised epitterium. Palate - Anterolateral zone.	
4. Palate - Posterolateral zone.	5 6
Alveolar mucosa.	
6. Vermilion border of lip.	
7. Tongue - Circumvallate Papillae Fungiform Papillae	n = m5
- Filiform Papillae	
8. Dentogingival junction.	
9. Skin	A
Tempero Mandibular Joint (T.M.J.):	TENY OF
Histological section (Desirable to know). PRINCIPAL	

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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
	Total	70

B. Viva Voce : 20 Marks

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

D. Practicals : 90 Marks

1. Carving30 marks1 hour 15 min2. Spotters60 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:

Name of the Book & Title	Author	Edn	Yr. of Publ.	Publ.'s Name Place of Publ.	Price
Orban's Oral Histology and Embryology	Orban's	10th	1990	American Publication Ontoria, 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, P hysiology 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 editon By Bath- Balogh

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I BDS **DENTAL MATERIALS**

SI. No.	Theory - 20 Hrs. Practical - 40 Hrs.	Total 60 Hrs.
1.	 Introduction: 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.	Structure and behaviour of matter: 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.	 Impression materials and duplicating materials: 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, Ålginate, 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.	Denture base resins a. Tray materials. b. Temporary base materials - contents, properties, manipulation, advantages and disadvantages.	02

SI. 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. 	3
7.	Tooth restorative materials - Classification and ideal properties: 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 polycarbxylate, calcium hydroxide, glass ionomer, modified glass ianomer 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	Nothing any any
Restorative Dental Materials	Craig.	11th	2002	11 1 1101	CIPAL PANDU MEMORI
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SI. 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. 	T.
7.	Tooth restorative materials - Classification and ideal properties: 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 polycarbxylate, calcium hydroxide, glass ionomer, modified glass ianomer and resin cement. Comparative studies of mechanical, biological and esthetic properties of all cements.	10
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Text Book of Dental Material	Craig. O. Brien	06th	1996	Mosby, USA	\$ 15.00
Restorative Dental Materials	Craig.	11th	2092 PRINC	IPA I	Rs. 675/-

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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 a Edentulous Patients	ΧI	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	Х	1996	W.B Saunders Company, Philadelphia, USA	\$ 35
Craig	Dental Materials, Properties & Manipulation	VI	1996	Mosby, St. Louis Missouri, USA	\$ 35

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II Year - BDS DENTAL MATERIAL

	Theory - 60 Hrs. Practical - 200 Hrs.	# K
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.	
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. PRINCIPAL	04

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SI. 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 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, trituaration.

II B.D.S PRE-CLINICAL PROSTHODONTICS

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

. Introduction to Prosthodontics - Scope and Definition	
1. Masticatory apparatus and function: 1. Maxillae & Mandible with & without teeth. 2. Muscles of mastication and accessory muscles of mastication. 3. Brief anatomy of TMJ. 4. Mandibular movements. 5. Functions of teeth.	Must Know 2 hrs
3. Various branches of Prosthodontics and prosthesis: 1. Scope & limitation. 2. Appliances v/s prosthesis. 3. Dental prosthesis v/s non-dental prosthesis.	Must Know 1 hr
 Effect of loss of teeth: On general health. On masticatory apparatus. Need of replace lost teeth. 	Must Know 1 hr
Outline of Prosthodontics: Types of Prosthesis. Requirements of prosthesis- Physical, biological, esthetic considerations.	Must Know 1 hr
I. Introduction to components of Prosthesis	
A. Complete Denture Prosthesis: 1. Various surfaces (Border and surface anatomy). 2. Components - Base and Teeth.	Must Know 1 hrs
 Removable Partial Denture: Classification. Major and minor Connectors. Direct retainers. Rests. Indirect retainers. Denture base. Artificial teeth. 	Must Knơw 2 hrs
C. Fixed Partial Denture: 1. Classification. 2. Retainers.	Must Know 1 hr

III. All rela IV. Introdu A. Compl 1. Gene 2. Pre-B. Remov 1. Gene 2. Occl 3. Mod 4. Guid 5. Elim C. Fixed P 1. Princ 2. Retai V. Introdu Prosthe **Clinical St**

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 Introduction to jaw relation record Definition and type Temporary denture base - Indications, Advantages, Disadvantages, materials used Occlusion rims - materials, shape, dimensions Clinical procedures of jaw relation recording in brief 	Must Know 2 hrs.
Articulators and face bow 1. Basic out line 2. Need for articulators 3. Definition, classification, parts, advantages, disadvantages of articulators 4. Definitions, classification, parts, advantages, disadvantages and purpose of face bow transfer 5. Demonstration of face bow transfer to an articulator on a dummy	Must Know 2 hrs.
Selection of Teeth 1. Various guidelines for selection of teeth including dentogenic concept 2. Arrangement of teeth in detail with various factors of esthetics, overjet, overbite etc	Must Know 1 hr
Occlusion 1. Balanced Occlusion - need and advantages 2. Various factors of balanced occlusion	Must Know 1 hrs
Try in Procedures 1. Anterior try - in 2. Posterior try - in 3. Waxing, carvin, polishing and final try - in	Must Know 1 hr
Processing Procedures Flasking Dewaxing Packing Curing Finishing and polishing of acrylic dentures	Must Know 1 hr
VI. Casting Procedures Preparation of die Wax pattern Investing Burnout Casting Finishing and polishing	Desirable to Know 1 hrs

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II BDS PRACTICAL EXCERCISES 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 was 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 Treat ment 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	Χ	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

SI. No.					
1.	1. Introduction to Conservative Dentistry.				
2.	Definition, Aim & Scope of Conservative Dentistry & Endodontics	1 hour			
3.	. Classification of Cavities.				
4.	Nomenclature.	1 hour			
5.	Various chair side positions.				
6.	Tooth Numbering.	1 hour			
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.				
10.	Principles of cavity /Tooth preparation for :	5 hours			
	a. Silver Amalgam				
	b. Cast gold inlay				
rm.	c. Composite resins.				
	d. Glass lonomer	- 3			
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 EXCERCISES - 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/&

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

II. INLAY PREPARATION:

Class I	1	To prepare Wax patterns 15 Hours
Class II	2+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

- 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)

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	1 hour
	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.	7
:=:	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 is some periodontal diseases, periapical disease PRINCIPAL	2 hour

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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	130 Hours
Total	90 Hours	160 Hours

III YEAR B.D.S - COURSE SYLLABUS:

Subject	Hours
 Introduction, Definition, Historical Background, Aims and Objectives of Orthodontics and Need for Orthodontic care. 	1 Hour
Growth and Development: In General Definition	6 Hours
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	
 Postnatal growth and development of: cranial base, maxilla, mandible, dental arches and occlusion 	
Functional Development of Dental Arches and Occlusion	2 Hours
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	
4. Malocclusion - In General	3 Hours
Concept of normal occlusion	

c. Description of different types of Dental, skeletal and functional malocclusion Classification of Malocclusion Principle, description, advantages and disadvantages of classification of malocclusion by Angle and modification, Simon, Lischer and Ackerman and Proffitt.	3 5
5. Normal and Abnormal Function of Stomatognathic System	1 Hour
 Aetiology of Malocclusion a. Definition, importance, classification, local & general aetiological factors b. Etiology of following different types of malocclusion i. Midline diastema ii. Spacing iii. Crowding iv. Cross-Bite: Anterior/Posterior v. Class III Malocclusion vi. Class II Malocclusion viii. Deep Bite viiii. Open Bite 	3 Hours
 7. Diagnosis and Diagnostic Aids a. Definition, Importance and classification of diagnostic aids b. Importance of case history and clinical examination in orthodontics c. Study Models: - Importance and uses - Preparation and preservation of study models d. Importance of intraoral X-rays in orthodontics e. Panoramic radiographs - Principles, Advantages, Disadvantages and uses f. Cephalometrics: Its advantages and disadvantages i. Definition ii. Description and use of cephalostat iii. Description and uses of anatomical landmarks lines and angles used in cephalometric and analysis iv. Analysis - Steiner's, Down's, Tweed's. Ricket's E-line g. Electromyography and its use in orthodontics h. Wrist X-rays and its importance in orthodontics 	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

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- f. Bending of U.V.
- 2. Construction of Clasps (upper/lower) Gauge 22 or 0.7mm
 - a. ¾ 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

 - 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

I BDS EDIATRIC AND PREVENTIVE ENTISTRY

hing hours: Theory: 65 Hours,

dontics and Preventive Dentistry Lectures

icals/Clinics: 200 Hours

r: 70 Hours

ar: 130 Hours

r: 20 Hours r: 45 Hours

AR PEDODONTICS AND PREVENTIVE DENTISTRY: 20 HOURS

TOTAL CONTRACTOR OF THE PARTY O
1hours
2 hours
2 hours
2 hours
3 hours

Role of diet and Diet counsellir

Caries activity application

6. Dental materials (revision)

7. Case history recordi

 Principles of hi treatment planni

8. Pediatric operative de

 Principles of ope - Isolation-importa

Modifications in and young perma

Atraumatic/ Alter

Other methods of

Restoration of ca teeth) using variou silver amalgam

Preformed crowns

9. Gingival and periodont

Normal gingival an

Definition. Classifi Aetiology, pathoge

conditions seen in

10. Dental radiology as rela

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 c. Methods of gaining space in the arch: - Indications, relative merits and demerits of proximal stripping, arch expansion and extractions d. Extractions in Orthodontics - indications and selection of teeth for extraction 	
 6. Orthodontic Appliances: General a. Requisites for orthodontic appliances b. Classification, indications of Removable and Functional Appliances c. Methods of force application d. Materials used in construction of various orthodontic appliances – use of stainless steel, technical considerations in curing of acrylic, Prinicples of welding and soldering, fluxes and antifluxes e. Preliminary knowledge of acid etching and direct bonding 	2 Hours
7. Removable Orthodontic Appliance a. Components of removable appliances b. Different type of clasps and their use c. Different type of labial bows and their use d. Different types of springs and their use e. Expansion appliances in orthodontics i. Principles ii. Indication for arch expansion iii. Description of expansion appliances and different types of expansion devices and their uses iv. Rapid maxillary expansion	2 Hours
 8. Fixed Orthodontic Appliances a. Definition, Indication and Contraindications b. Component parts and their uses c. Basic principles of different techniques: Edgewise, Begg straight wire 	2 Hours
9. Extraoral Appliancesa. Headgearsb. Chincupc. Reverse pull headgears	1 Hour
 10. Myofunctional Appliances a. Definition and principles b. Muscle exercises and their uses in orthodontics c. Functional appliances: i. Activator, Oral Screens, Frankels function regulator, bionator twin blocks, lip bumper ii. Inclined planes - upper and lower 	3 Hours
11. Orthodontic Management of Cleft Lip and Palate	2 Hours
12. Principles of Surgical Orthodontics a. Maxillary Prognathism and Retrognathism b. Mandibular Prognathism and Retrognathism C I PA L	2 Hours
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c. d.	Anterior open bite and deep bite Cross bite	
13. Pri	nciple, Differential Diagnosis and Methods of Treatment of:	3 Hours
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	
14. Re	tention and Relapse	2 Hours
De	finition, Need for retention, Causes of relapse, Methods of retention, ferent types of retention devices, Duration of retention, Theories of retention	
15. Eth	nics	1 Hour
16. Ge	netic in Orthodontics	1 Hour
17. Co	mputers in Orthodontics	1 Hour
18. Ad	ult 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 1mm5. 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 Adams
- 6. Clinical Orthodontics: Vol 1 & 2 Salzmann
- 7. Orthodontics Graber and Swine

SCHEME OF EXAMINATION OF B.D.S (ORTHODONTICS) Total Theory Marks - 100 Marks

Theory Written Examination - 70 Marks
Vivavoce - 20 Marks
Internal Assessment - 10 Marks
Total 100 Marks

Theory Written Examination-70 Marks

Type of Questions	Marks	Total
Long Essays - 2	2 x 1,0	20
Short Essays - 8	8 x 5	40
Short Answers - 5	5 x 2	10
Total		70

Clinical Examination - 100 Marks

University Clinical Examination 90 Marks
Internal Assessment - 10 Marks
Total 100 Marks

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 M rks	40
Clinical Case Discussion	シングサ	20
	PRIN @PPAL	90

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IV BDS PEDIATRIC AND PREVENTIVE DENTISTRY

Lectures Theory

IV Year: 45 Hours

Practicals/Clinics: IV Year: 130 Hours

IV YEAR PEDODONTICS AND PREVENTIVE DENTISTRY: 45 HOURS

I. No	o. Subjects	Hours
1.	Child Psychology Definition Importance of understanding child psychology in pedodontics	4 hours
	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	
2.	Behaviour Management Definition	5 hours
	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	IX IX
3.	Fluorides Historical background	4 hours
	Systemic fluorides-availability, agents, concentrations, advantages and disadvantages Topical fluorides-agents, composition, methods of application both for	12 2 2
	professional and home use, advantages and disadvantages Mechanism of action and its anti cariogenic effect Fluoride toxicity and its management	3.74
	De fluoridation techniques	

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	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	4 hours
	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	5 hours
	6.	Preventive and Interceptive Orthodontics Definitions Problems seen during primary and mixed dentition periods and their management Mixed dentition analysis Serial extraction Space management	4 hours
	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	4 hours
	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	5 hours
	9.	Oral surgical procedures in children Indications and contra indications for extraction Minor surgical procedures in children Knowledge of local and general anaesthesia	2 hours
	10.	Preventive dentistry Definition, principles and scope	3 hours

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	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

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