

ANNEXURE-III

SCHEME AND SYLLABUS FOR THE POST OF DENTAL ASSISTANT SURGEONS IN HM & FW DEPARTMENT

Scheme of Examination

Part-A:WRITTEN EXAMINATION (Objective Type)	No.of Questions	Duration (Minutes)	Maximum Marks
Paper-I: General Studies and General Abilities	150	150	150
Paper-II: Dental Surgery (Degree Level)	150	150	300
Part-B:Interview			50
		Total	500

Syllabus

PAPER-I: GENERAL STUDIES AND GENERAL ABILITIES

- Current Affairs: International, National and State.
- Society, Heritage and Culture, Polity, Economy, Human Development Indices and the Development Programmes in India and Telangana.
- Natural Resources in India and Telangana: their distribution, exploitation, conservation and related issues.
- Basic concepts of Ecology and Environment and their impact on health and economy; Disasters and Disaster management.
- Impact of changing demographic trends on health, environment and society.
- Agriculture, Industry, Trade, Transportation and Service sectors in India and Telangana.
- Food adulteration, Food processing, food distribution, food storage and their relevance to public health.
- Recent trends in Science and Technology.
- Telangana Statehood movement and formation of Telangana State.
- Moral values and Professional ethics.
- Logical Reasoning: Analytical Ability and Data Interpretation.

DENTAL SURGERY

1. HUMAN ANATOMY, EMBRYOLOGY, HISTOLOGY & MEDICAL GENETICS

- General Anatomy: Introduction of anatomical terms and brief outline of various systems of the body.
- Regional Anatomy of head & neck
- General disposition of thoracic, abdominal & pelvic organs.
- General embryology & systemic embryology with respect to development of head & neck.
- Histology of basic tissues and of the organs of gastrointestinal respiratory, Endocrine, excretory systems & gonads.
- Medical genetics.

Head and Neck

Thorax

- Thoracic wall
- Heart chambers
- Coronary arteries
- Pericardium
- Lungs – surfaces; pleural cavity
- Diaphragm

Abdomen:

- Peritoneal cavity
- Organs in the abdominal & pelvic cavity

Clinical Procedures

- Intramuscular injections:
- Intravenous injections & venesection
- Lumbar puncture

Embryology

Histology

- Basic tissues, Tissue, Nervous tissue: Peripheral nerve, optic nerve, sensory ganglion, motor ganglion, Skin.
- Classification of Glands: salivary glands (serous, mucous and mixed gland), Blood vessels, Lymphoid tissue, Tooth, lip, tongue, hard palate, oesophagus, stomach, duodenum, ileum, colon, vermiform appendix Liver, Pancreas, Lung, Trachea, Epiglottis, Thyroid gland, parathyroid gland, supra renal and pituitary gland, Kidney, Ureter, Urinary bladder, Ovary and testis.
- Medical Genetics

2. HUMAN PHYSIOLOGY

- General Physiology
- Blood
- Muscle and Nerve
- Digestive System
- Excretory System
- Body Temperature and Functions of Skin
- Endocrinology
- Reproduction
- Cardio Vascular system
- Respiratory System
- Central Nervous System
- Special Senses

Bio Chemistry

- Aims and Scope of the Course in Biochemistry

Biochemistry and Nutrition

- Chemistry of Bioorganic Molecules
- Macronutrients and Digestion
- Micronutrients
- Energy Metabolism
- Special Aspects of Metabolism
- Biochemical Genetics and Protein Synthesis
- Enzyme and Metabolic Regulation
- Structural Components and Blood Proteins
- Medical Biochemistry

3. DENTAL ANATOMY, EMBRYOLOGY AND ORAL HISTOLOGY

- Dental Anatomy including Embryology and Oral Histology – a composite of basic Dental Sciences & their clinical applications.
- Tooth Morphology, Introduction to Tooth Morphology

- Morphology of permanent teeth
- Morphology of Deciduous teeth
- Occlusion
- Oral Embryology
 - a. Brief review of development of face, jaws, lip, palate and tongue with applied aspects.
 - b. Development of teeth
 - c. Eruption of deciduous and permanent teeth
 - d. Shedding of teeth

Oral Histology

- Detailed microscopic study of Enamel, Dentine, Cementum & Pulp tissue.
- Detailed microscopic study of Oral Mucosa.
- Salivary glands.
- TM Joint.
- Maxillary Sinus.
- Processing of Hard & soft tissues for microscopic study.
- Basic histochemical staining patterns of oral tissues.

Oral Physiology

- Saliva
- Mastication
- Deglutition
- Calcium, Phosphorous and fluoride metabolism
- Theories of Mineralization
- Physiology of Taste
- Physiology of Speech

4. GENERAL PATHOLOGY

- General Pathology
- Etiology and Pathogenesis of Disease
- Degenerations
- Cell death and Necrosis
- Inflammation
- Healing
- Tuberculosis
- Typhoid
- Syphilis
- Thrombosis
- Embolism
- Ischaemia and Infraction
- Derangements of body fluids
- Disorders of circulation
- Nutritional Disorders
- Immunological mechanisms in disease
- AIDS and Hepatitis
- Hypertension
- Diabetes Mellitus
- Adaptive disorders of growth
- General Aspects of neoplasia
- Systemic Pathology
- Anaemias
- Leukaemias
- Diseases of Lymph nodes
- Diseases of oral cavity
- Diseases of salivary glands
- Common diseases of Bones
- Diseases of Cardio Vascular System
- Haemorrhagic Disorders

General Microbiology

- Immunology
- Systematic Bacteriology
- Virology

- Mycology
- Parasitology

5. GENERAL AND DENTAL PHARMACOLOGY AND THERAPEUTICS

- General Pharmacology, Dental Pharmacology.

6. DENTAL MATERIALS

- Structure of matter and principles of adhesion
- Important physical properties applicable to dental materials
- Biological considerations in use of dental materials
- Gypsum & Gypsum products
- Impression materials used in Dentistry
- Synthetic resins used in Dentistry
- Acrylic Resins
- Restorative Resins
- Metal and Alloys
- Direct filling gold
- Dental casting alloys
- Dental waxes including inlay casting wax
- Dental casting investments
- Soldering, Brazing and Welding
- Wrought base metal alloys
- Dental cements
- Dental Ceramics
- Abrasion & polishing Agents
- Abrasive action
- Die and Counter Die materials including Electroforming and Electropolishing
- Dental Implants
- Mechanics of Cutting

7. ORAL PATHOLOGY & ORAL MICROBIOLOGY

- Developmental disturbances of teeth, jaws and soft tissues of oral & paraoral region
- Forensic Odontology
- Dental Caries
- Pulp & periapical Pathology & Osteomyelitis
- Periodontal Diseases
- Microbial infections of oral soft tissues
- Common, non-inflammatory diseases involving the jaws
- Diseases of TM Joint
- Cysts of the Oral & Paraoral region
- Tumours of the Oral Cavity
- Traumatic, Reactive & Regressive lesions of Oral Cavity
- Non neoplastic Salivary Gland Diseases
- Systemic Diseases involving Oral cavity.
- Mucocutaneous Lesions
- Diseases of the Nerves
- Pigmentation of Oral & Paraoral region & Discolouration of teeth
- Diseases of Maxillary Sinus: Oral Precancer, Cancer and Biopsy.
- Principals of Basic Forensic Odontology (Pre-clinical Forensic Odontology)

8. GENERAL MEDICINE

- Aims of medicine Definitions of signs, symptoms, diagnosis, differential diagnosis treatment & prognosis
- Infections
- G.I.T.
- CVS
- RS
- Hematology
- Renal System
- Nutrition
- CNS
- Endocrines
- Critical Care.

9. GENERAL SURGERY

- History of Surgery
- General Principles of Surgery
- Wounds
- Inflammation
- Infections
- Transmissible viral infections
- Shock and Haemorrhage
- Tumours, Ulcers, Cysts, Sinus and Eistulae
- Diseases of Lymphatic System
- Diseases of the Oral Cavity
- Diseases of Larynx, Nasopharynx
- Nervous System
- Fractures
- Principles of Operative Surgery
- Anomolies of Development of Face
- Diseases of thyroid and parathyroid
- Swelling of the jaw
- Biopsy

10. CONSERVATIVE DENTISTRY AND ENDODONTICS

- Nomenclature of Dentition
- Principles of Cavity Preparation
- Dental Caries
- Treatment Planning for operative Dentistry
- Gnathological Concepts of Restoration: Physiology of occlusion
- Aramamentrium for Cavity Preparation
- Control of Operating Field
- Amalgam Restoration
- Pulp Protection
- Anterior Restorations
- Direct filling Gold Restorations
- Preventive Measures in Restorative Practice
- Temporisation or Interim Restoration
- Pin Amalgam Restoration Indication Contra Indication
- Management of Deep carious lesions indirect and direct pulp capping
- Non carious destructions tooth structures diagnosis and clinical management.
- Hypersensitive dentine and its managements
- Cast restorations
- Die materials and preparation of dies.
- Gingival tissue management for cast restoration and impression procedures.
- Recent cavity modification amalgam restoration
- Differences between amalgam and inlay cavity preparation with note on all the types of bewels used for cast restorations.
- Control of pain during operative procedures
- Treatment planning for operative Dentistry detailed clinical examination radiographic examination.
- Vitality tests, Diagnosis and treatment planning and preparation of case sheet.
- Applied dental materials
- Endodontics : Introduction definition scope and future of endodontics
- Clinical diagnostic methods
- Emergency Endodontic procedures
- Pulpal diseases causes, types and treatment
- Periapical diseases
- Vital Pulp therapy
- Apexogenesis and Apexification or problems of open apex
- Rationale of endodontic treatment case selection, indication and contradictions for root canal treatments.
- Principles of root canal treatment mouth preparation root canal instruments, hand instruments, power driven instruments, standardization color coding principle of using endodontic instruments. Sterilization of root canal instruments and materials rubber dam application.

- Anatomy of the pulp cavity: root canals apical foramen. Anomalies of pulp cavities access cavity preparation of anterior and premolar teeth.
- Preparation of root canal space. Determination of working length, cleaning and shaping of root canals, irrigating solution chemical aids to instrumentation.
- Disinfection of root canal space, intracanal medicaments, poly antibiotic paste ross mans paste, mummifying agents. Out line of root canal treatment, bacteriological examinations, culture methods.
- Problems during cleaning and shaping of root canal spaces. Perforation and its management. Broken instruments and its management, management of single and double curved root canals.
- Methods of cleaning and shaping like step back crown down and conventional methods.
- Obturation of the root canal system. Requirements of an ideal root canal filling material obturation methods using gutta percha healing after endodontic treatment. Failures in endodontics.
- Root canal sealers.
- Post endodontic restoration fabrication and components of post core preparation.
- Smear layer and its importance in endodontics and conservative treatment
- Discoloured teeth and its management. Bleaching agents, vital and non vital bleaching methods
- Traumatized teeth classification of fractured teeth. Management of fractured tooth and root. Luxated teeth and its management.
- Endodontic surgeries
- Root resorption
- Emergency endodontic procedures.
- Lasers in conservative endodontics
- Professional association dentist act, 1948 and its Amendment 1993.
- Duties towards the Government like payments of Professional Tax, Income Tax.
- Financial Management of practice.
- Dental material and basic equipment management.
- Ethics

11. ORAL & MAXILLOFACIAL SURGERY

- Diagnosis in oral surgery
- Principles of infection control and cross-infection control with particular reference to HIV/ AIDS and Hepatitis.
- Principles of Oral Surgery
 - Asepsis
 - Painless Surgery
 - Access: Extra – oral: Skin incisions
 - Control of haemorrhage during surgery
 - Drainage and Debridement
 - Closure of wounds
 - Post operative care
- Exodontia: General considerations
 - For rceps or intra-alveolar or closed method
 - Trans-alveolar, surgical or open method, Dental elevators
- Impacted teeth
- Pre-prosthetic Surgery
- Diseases of the maxillary sinus
- Disorders of T.M. Joint
- Infections of the Oral Cavity
- Benign cystic lesions of the jaws
- Tumours of the Oral Cavity
- Fractures of the jaws
- Salivary gland diseases
- Jaw deformities
- Neurological disorders
- Cleft Lip and Palate
- Medical Emergencies in dental practice
- Emergency drugs and Intra muscular I.V. Injections
- Oral Implantology
- Ethics

- Local Anaesthesia
- General Anaesthesia

12. ORAL MEDICINE AND RADIOLOGY

Oral Medicine and Diagnostic Aids

Diagnostic Methods

Diagnosis, Differential Diagnosis

- Teeth
- Diseases of bone and Osteodystrophies
- Temporomandibular joint
- Common cysts of soft tissue: Mucocele and Ranula Cysts of bone. Odontogenic and nonodontogenic
- Tumors: Soft tissue , Hard tissue
- Periodontal diseases
- Granulomatous diseases
- Miscellaneous Disorders

Oral Medicine and Therapeutics

- Infections oral and paraoral structures
- Important common mucosal lesions
- Cervico- facial lymphadenopathy
- Facial Pain
- Tongue in local and systemic disorders
- Oral manifestations of – Systemic disorders
- Disease of salivary glands
- Dermatological diseases with oral manifestations
- Immunological diseases with oral manifestations
- Allergy
- Foci of oral infection and their ill effects on general health
- Management of Dental Problems in medically comprising persons.
- Precancerous lesions and conditions
- Nerve and Muscle Diseases
- Forensic Odontology
- Therapeutics

Oral Radiology

- Physics of radiation: (a). nature and types of radiations (b) sources of radiations (c) Productions of X- rays. (d) Properties of X- rays (e) Compton Effect (f) Photo electric effect (g) radiation measuring units
 - Biological effects of radiation
 - Radiation safety and protection measures
 - Principles of image production
 - Radiographic Techniques:
 - (I) Intra- oral: (a) periapical radiographs (bisecting and parallel techniques) (b) bite wing radiographs (c) Occlusal radiographs
 - (II) Extra- Oral: (a) lateral projections of skull and jaw bones and paranasal sinuses (c) cephalograms (d) Orthopantomograph (e) Projections of temporomandibular joint and condyle of mandible (f) Projections for zygomatic arches
 - (III) Specialized Techniques: (a) sialography (b) xeroradiography (c).tomography
- Factors in Production of good radiographs
 - (a).K.V.P.and mA. Of X-ray machine (b).Filters (c).Collimations (d).Intensifying screens (e).Grids (f). X-ray films (g).Exposure (h).Techniques (i).Dark room (j).Developer and fixer solutions (k).Film processing
- Radiographic normal anatomical landmarks
- Faculty radiographs and artefacts in radiographs
- Interpretation of radiographs in various abnormalities of teeth, bones and other orofacial tissues
- Principles of radiotherapy of oro-facial malignancies and complications of radiotherapy
- Contrast radiography and basis knowledge of radio-active isotopes
- Radiography in Forensic Odontology – Radiographic age estimation and post-mortem radiographic methods.

13. ORTHODONTICS & DENTAL ORTHOPAEDICS

- Growth and Development: In General
- Morphologic Development of Craniofacial Structures
- Functional Development of Dental Arches and Occlusion
- Clinical Application of Growth and Development
- Malocclusion
- Classification of Malocclusion
- Normal and Abnormal Function of Stomatognathic System
- Etiology of Malocclusion
- Diagnosis and Diagnostic Aids
- General Principles in Orthodontic Treatment Planning of Dental and skeletal Malocclusions
- Anchorage in Orthodontics
- Biomechanical Principles in Orthodontic Tooth Movement
- Preventive Orthodontics
- Interceptive Orthodontics
- Corrective Orthodontics
- Orthodontic Appliances: General
- Ethics
- Removable Orthodontic Appliances
- Fixed Orthodontic Appliances
- Extra Oral Appliances
- Myofunctional Appliances
- Orthodontic Management of Cleft Lip and Palate
- Principles of Surgical Orthodontics
- Principle, Differential Diagnosis & Methods of Treatment of:
 - Middle diastema
 - Cross bite
 - Open bite
 - Deep bite
 - Spacing
 - Crowding
 - Class II – Division 1, Division 2
 - Class III Malocclusion – True and Pseudo Class II
- Retention and Relapse

14. PAEDIATRIC & PREVENTIVE DENTISTRY

- Growth & development
- Development of occlusion from birth through adolescence
- Dental anatomy and histology
- Dental radiology related to pedodontics
- Oral surgical procedures in children
- Dental caries
- Gingival & periodontal diseases in children
- Child psychology
- Behaviour management
- Pediatric operative dentistry
- Pediatric endodontics
- Traumatic injuries in children
- Preventive & interceptive orthodontics
- Oral habits in children
- Dental care of children with special needs
- Congenital abnormalities in children
- Dental emergencies in children & their management
- Dental materials used in pediatric dentistry
- Preventive dentistry
- Dental health education & school dental health programmes.
- Fluorides
- Case history recording
- Setting up of pedodontic clinic
- Ethics

15. PUBLIC HEALTH DENTISTRY

- Public health

- Dental public health
- Research methodology and dental statistics
- Practice management
- Dentist act 1948 with amendment.
- Dental council of indian and state dental councils
- Composition and responsibilities
- Indian dental association head office, state, local and branches.
- Clinicals/field programme in community dentistry:

16. PERIODONTOLOGY

- Development of period-dental tissues
- Defensive mechanisms in the oral cavity
- Age changes in periodontal structures and their significance in geriatric dentistry, age changes in teeth and periodontal structures and their association with periodontal diseases and their significance in geriatric dentistry
- Classification of periodontal diseases
- Gingival diseases
- Epidemiology of periodontal diseases
- Extension of inflammation from gingival
- Pocket
- Etiology
- Risk factors
- Host response
- Periodontitis
- Diagnosis
- Prognosis
- Treatment plan
- Periodontal therapy
- Pocket eradication procedures
- Osseous surgery
- Mucogingival surgery & periodontal plastic surgeries
- Splints
- Hypersensitivity
- Implants
- Maintenance phase (spt)
- Pharmaco-therapy
- Periodontal management of medically compromised patients
- Inter-disciplinary care
- Systemic effects of periodontal diseases in brief
- Infection control protocol
- Ethics

17. PROSTHODONTICS AND CROWN & BRIDGE

- Complete Dentures
- Removable Flexible Dentures
- Fixed Partial Dentures
 - Solder Joints and Other Connecters
 - All-Ceramic Restorations
 - Metal-Ceramic Restorations
 - Preparations of intracoronal restorations
 - Preparations for extensively damaged teeth
 - Preparations for periodontally weakened teeth
 - The Functionally Generated Path Technique
 - Investing and Casting
 - Resin – Bonded Fixed Partial Denture