

## APPENDIX - I

**SCHEME AND SYLLABUS OF EXAMINATION FOR THE PURPOSE OF FILLING UP THE POST OF DENTAL SURGEON IN THE SIKKIM STATE HEALTH SERVICE.**

1. The examination will consist of 2 papers:-

PAPERS	SUBJECT	FULL MARKS	TIME ALLOWED
PAPER-I	General English & General Knowledge	100 (MCQ/Conventional)	2.00 hours.
PAPER-II	Medical Science	300(MCQ/Conventional)	3.00 hours.
<b>VIVA VOCE/PERSONALITY TEST -</b>		<b>50 marks</b>	

**2. PAPER-I: GENERAL ENGLISH**

The question will be designed to test the candidate's understanding and command of the English language. *Mode of Examination pattern shall be Conventional/MCQ for both Paper-I and Paper-II.*

**English:** Candidate will be required to answer questions designed to test their understanding of English and workman like use of words. The patterns of questions would be broadly as follows:-

- (1) Comprehension of given passage
- (2) Grammer
- (3) Usages and Vocabulary
- (4) Precise Writing/Essay Writing

**General Knowledge:** Knowledge of current events of local, National and International importance and of such matter of everyday observation and experience in their scientific aspects as may be expected of any educated person who has not made a special study of any scientific subject.

**PAPER-II: MEDICAL SCIENCE**

**1. MATERIALS USED IN DENTISTRY**

Aims and scope of the science of Dental materials .Structure and behaviour of materials. Important Physical properties applicable to dental materials including their biological consideration. Gypsum products used in dentistry including casting investment materials with or without gypsums binder.

Impression material used in dentistry including duplicating materials.

Synthetic resins used in dentistry.

General properties and physical characteristics Resins as denture base materials. Repair and

reline materials, soft liners, and tissue conditioners. Resins as restorative materials, unfilled and

filled resin restorative materials tissue sealants. Direct bonding cement materials.

Metals and Alloys : Their structure and behaviour and some important physical properties.

1. Dental amalgam alloys
2. Gold foil
3. Dental casting gold alloys
4. Dental waxes including inlay casting wax.
5. Welding and Soldering materials used.

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Dental Cements: Classification, composition manipulation properties and uses. Zinc cements,

Copper cements, Zinc oxide, Eugenol cements, Silicate cement, cavity line cavity varnishes, resin cement.

Dental Porcelain including porcelain fused to metal. Porcelain furnace and fusing.

Mechanics of Tooth cuttings, burs and points

Abrasives and polishing agents

Die and Counter die materials including electro-forming and electro-polishing

Filling materials for anterior teeth

## 2. Human Oral Anatomy, Physiology Histology & Tooth Morphology

- i) Development and growth of face 'teeth and jaws'
- ii) Development of enamel, dentine, cementum, pulp and periodontal membrane
- iii) Calcification of hard tissues of the teeth
- iv) Microscopic anatomy of hard and soft tissues of the tooth and surrounding structures.
- v) Microscopic anatomy of hard and soft tissue of the oral cavity such as lips, tongue, floor of the mouth, palate, salivary glands, alveolar bones etc
- vi) Mastication and deglutition
- vii) Age changes in teeth and surrounding structures
- viii) Shedding of the deciduous teeth
- ix) Eruption of permanent teeth
- x) Chronology of dentition
- xi) Form and arrangement of teeth occlusion
- xii) Functional anatomy of the oral cavity
- xiii) Temporomandibular joint
- xiv) Evolution of the jaws and teeth
- xv) Chemical composition of teeth
- xvi) Calcium phosphorous and fluoride metabolism
- xvii) Effect of hormones on oral tissues
- xviii) Influence of diet on oral structures
- xix) Saliva

## 3. GENERAL & DENTAL PHARMACOLOGY & THERAPEUTICS

### 1. General Pharmacology:

- a. General Principles of Pharmacology
- b. Drug receptors' Pharmacodynamics
- c. Pharmacokinetics
- d. Drug bio -transformation
- e. Dosage forms and routes of drug administration
- f. Adverse drug reactions

### 2. Drug action on Central Nervous System

- a. General Anaesthetics
- b. Sedatives - Diagnostics and Anti-anxiety Drugs
- c. Analgesics  
Narcotics  
Non-Narcotics (NSAID)
- d. Anti-epileptic drugs
- e. Analeptics


### 3. Drugs acting on Peripheral Nervous System

- a. Cholinergic receptor stimulants
- b. Cholinergic receptor antagonists

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- c. Adrenergic receptor activating drugs
- d. Local Anaesthetics
- e. Skeletal muscle relaxants
- 4. Anti-infective Agents
  - a. Sulphonamides & Trimethoprim
  - b. Metronidazole & Tinidazole
  - c. Antibiotics
  - d. Cancer Chemotherapy
- 5. Local anti-infective agents
  - a. Disinfectants and Antiseptics including anti fungal and antiviral agents
- 6. Drugs acting on Cardiovascular System
  - a. Drugs in Congestive Cardiac failure
  - b. Anti-hypertensive Agents
  - c. Vasodilators and Vasoconstrictors
  - d. Drug therapy of shock
  - e. Diuretics
- 7. Drugs acting on Hemopoetic System
  - a. Iron, Vitamin B12 & Folic acid
  - b. Haemostatic Agents & Anticoagulants
  - c. Fibrinolytic Agents & Antiplatelet drugs
- 8. Drugs acting on the Endocrine System
  - a. Hypothalamic & Pituitary Hormones
  - b. Insulin & Anti-diabetic drugs
  - c. Thyroid & Anti Thyroid drugs
  - d. Parathormone, Calcitonin, Calcium & Vitamin D
  - e. Adrenocorticosteroids
  - f. Sex Hormones
- 9. Antacid
  - a. Histamine & Anti-histamines
  - b. Serotonin
  - c. Prostaglandin
- 10. Drugs acting on Gastrointestinal Tract
  - a. Emetics & Anti Emetics
  - b. Antidiarrhoeal
  - c. Drugs used in constipation
- 11. Drugs acting on Respiratory System
  - a. Bronchodilators
  - b. Antitussive Agents
- 12. Vitamins
- 13. Drugs acting on immune system
- 14. Miscellaneous Agents
  - a. Astringents
  - b. Obtundents
  - c. Mummifying Agentsd. Styptics
  - e. Disclosing solutions
  - f. Dentifrices & mouthwashes
  - g. Bleaching agents

 **4. ORAL PATHOLOGY & MICROBIOLOGY**

- 1. Aims and objectives
- 2. Developmental disturbances of dental, oral and para-oral structure including hereditary disorders.
- 3. Dental caries

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4. Pulpal and periapical pathosis and their sequelae
5. Environmental lesions of the oral and paraoral structures
6. Defence mechanism of oral tissues and healing following injuries
7. Diseases of periodontal ligament, gingiva and Cementum
8. Effects of nutritional disturbances and hormonal disorders on the oral and para oral structures.
9. Infectious diseases of oral mucosa
10. Bone disorders affecting jaws
11. Cysts of oral cavity
12. Pre-cancerous lesions-etiology and pathology
13. Neoplasms of oral cavity
14. Diseases of salivary and lymph glands
15. Diseases of temporo-mandibular joint
16. Diseases of Nerves, Skin blood and their implications on Oral Tissues
17. Effects of radiation on Oral and para-oral tissues
18. Oral Microbiology.

## 5. GENERAL MEDICINE

Introduction:

Aims of Medicine, Definition of diagnosis, prognosis, treatment, history taking and physical

examinations of a medical case. Medical emergencies in dental practice G.I. Disorders: Stomatitis, glossitis, gastritis, Diarrhoea, Amoebiasis, Ascities, mal absorption syndrome.

Liver :

1. Jaundice, Viral hepatitis, cirrhosis liver, Tender hepatomegaly
2. Cardiovascular system:
3. Congenital heart disease, classification Rheumatic heart disease, sub-acute bacterial endocarditis. Congestive heart failure. Left Ventricular failure. Hypertension, Coronary artery disease
4. Respiratory system:
5. Pneumonia, Bronchitis, Emphysema, Lung Abscess, Eosinophilia Pulmonary Embolism, Pulmonary Tuberculosis, Respiratory failure
- Renal Diseases:
1. Acute Glomerulo Nephritis, Nephrotic Syndrome
2. Haematology:
3. Anaemia, Coagulation defects, Bleeding disorders Agranulocytosis. Leukaemia, Oral Manifestations of Haematological disorders, Lymphadenopathy and splenomegaly.
4. Central Nervous Systems.
5. Meningitis, Facial palsy, Facial pain epilepsy, Headache, Syncope.
6. Nutritional and Metabolic:
7. Balanced diet-normal daily Protein Caloric malnutrition requirements. Avitaminosis - Diabetes mellitus, calcium homeostasis
8. Endocrine Disorders:
9. Thyroid Hypo and Hyper
10. Pituitary-Hypo and Hyper
11. Parathyroid
12. Infections:
13. Enteric fever-mumps-Viral Exanthomata-Diphtheria - Syphilis - Gonorrhoea.
14. Miscellaneous:
15. Allergy-Drug reactions-Drug interactions - Evaluation of a case for general anesthesia.

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## 6. GENERAL SURGERY

1. Introduction to Surgery, Surgery especially related to Oro-dental Surgery, Classification of diseases.
2. Inflammation, soft tissue hard tissue-causes, varieties sequelae and treatment.
3. Infections Acute and Chronic, Abscess, Carbuncle Sinus, Fistula, Ulceration Gangrene, Cellulitis, Erysipelas Septicaemia, Pyaemia Toxaemia, Cancrum Oris, Tuberculosis, Syphilis Gonorrhoea Actinomycosis, Anthrax, Tetanus.
4. Wounds - complications Treatment, Repair, Asepsis and Antiseptic Measures and procedure with particular reference to the Oral cavity. Haemorrhage and its treatment, haemophilia, Syncope, Shock, Collapse, Head injury - Introduction.
5. Cysts and new growths - Their general consideration with special reference to those occurring in the Buccal Cavity.
6. Diseases of the Lymphatic glands especially of the neck.
7. Outline of diseases of the mouth lips, tongue palate, tonsils and salivary glands.
8. Infections and diseases of the Larynx, Tracheostomy.
9. Nervous system injury to Facial Nerves, paralysis trigeminal Neuralgia
10. Principles of Surgical treatment, Diathermy and radium treatment.
11. Fracture - General Principles of treatment, diathermy treatment
12. Cleft lip and cleft palate. Thyroid and parathyroid.
13. Swellings of jaws.

## 7. PREVENTIVE AND COMMUNITY DENTISTRY

1. Bio-statistics :  
Introduction and General Principles of Bio-statistics & statistical procedures.
2. Psychology:  
Introduction to Psychological development from birth to adolescence, management of child in the dental office parent counselling in respect of dental health and hygiene of the child.
3. Public Health:  
Concept and Philosophy of Public Health, Public Health India  
General Epidemiology - Health Education, Environmental Health, disposal of wastes, water norms for portability purification.
4. Preventive Dentistry:  
Prevention, levels of prevention, various measures in the prevention of dental and oral diseases on individual and mass level
5. Public Health Dentistry:  
Introduction, definition, objectives functions of public health dentistry procedural steps in dental public health indices for dental diseases, surveying and evaluation, epidemiology of dental caries, Periodontal diseases, oral care, public dental health programme, school dental health program,

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Dental Health Services of State and Centre. Private practice administration, ethics, Dental Council and Association. Epidemiology of periodontal disease and parameters used in clinical and population studies.

## 8. CONSERVATIVE DENTISTRY AND ENDODONTICS

Definition and Scope. Oral Hygiene in relation to conservative dentistry instruments. Nomenclature design and formulae, care and sterilization, examination, diagnosis and treatment planning, charting and recording of cases, cavities classification and nomenclature, choice of filling materials, Principles of cavity preparations, control of pain, prevention of damage to hard and soft tissues during Operative - Procedures, methods employed for exclusion of saliva Bio-Mechanics of cavity design and restoration with filling materials, Pulp and soft tissue protection. Aerators and high-speed equipment, Cavity preparation for various types of restoration including inlays and onlays restorative procedures matrices drugs used in the conservative dentistry, fractured teeth and their treatment. Sensitive dentine, its treatment. Ceramics in conservative dentistry.

### ENDODONTICS:

Rationale of Endodontic Therapy. Diagnosis in Endodontics, Care and Sterilisation of Instruments. Endodontic Treatment of Vital and Non-Vital pulp. Tests for sterility of the root canal. Drugs used in root canal therapy. Bleaching of Teeth Restoration of Endodontically Treated Teeth. Surgical Treatment in Endodontics.

## 9. ORTHODONTIA

1. Definition, aims, objects and scope of Orthodontics, Growth and Development of jaws teeth, face and skull and establishment of normal occlusion.
3. Genetics as applied to Orthodontics
4. Normal occlusion and its characteristics. Factors responsible for establishment and maintenance of normal occlusion.
5. Malocclusion type & Different classifications.
6. Aetiology of malocclusion.
7. History taking and examination of patient and case analysis and differential diagnosis including cephalometrics and treatment planning.
8. (a) Preventive and interceptive treatment of malocclusion (b) Extraction in orthodontics
9. Appliances used in orthodontic treatment - Adequate knowledge of (a) removable appliances, Mechanical appliances functional appliances
10. Tissue changes incident to orthodontic treatment.
11. Materials used in orthodontia
12. Habit breaking appliances.

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## 10. ORAL MEDICINE (ORAL DIAGNOSIS) AND RADIOLOGY

### Oral Medicine, Oral Diagnosis

1. Scope and importance of the subject.
2. Methods of diagnosis including special investigations
3. Acute infections of Oral and para-oral structures
4. Blood dyscrasias and their management.
5. Managements of Cardiac patient in dentistry.
6. Metabolic and endocrine disturbances and their oral manifestations.
7. Nutritional deficiencies and their significances in dentistry.
8. Oral sepsis and its effect on general system.
9. Dysfunctions of temporomandibular joints.
10. Cervico-facial lymphadenopathy.
11. Diseases of salivary glands.
12. Facial pain
13. Cysts and tumour of the oral cavity.
14. Oral manifestation of dermatological and other systemic disturbances
15. Special investigations
16. Immune concepts of oral lesions
17. Forensic odontology Dental Radiology

### Physics of radiation -

1. Production and properties of X-ray.
2. Principles of X-ray techniques and factors for Radiography and fluoroscopy.
3. Technique of intra-oral and extra-oral Radiography and normal anatomical landmarks
4. Radiological interpretation of abnormal dental and jaw conditions
5. Elements of Radiation treatment in oral and facial conditions and their sequelae
6. Contrast radiography and recent advances in Dental Radiography including radioactive tracers.

## 11. PERIODONTIA

1. Introduction - Scope and applicability of the subject. Historical background of Periodontology.
2. Maintenance of Health - Role and Scope of Oral Physiotherapy measures - patients education  
- program and periodic check
3. Classification of gingival and periodontal disturbances
4. Gingival enlargement
5. Infective muco-gingival conditions - specific and non-specific
6. Degenerative conditions - Gingivitis and Periodontitis
7. Atrophic conditions affecting gingival and periodontal tissues
8. Local and systemic factors in the causation of gingival and periodontal lesions
9. Periodontitis and sequelae
10. Malocclusion, Mal-alignment and traumatic occlusion, Bruxism and Temporomandibular joint disturbances, Occlusal equilibration
11. Diagnosis and diagnostic aids including roentgenography and its uses and limitations
12. Prognosis

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13. Morphological defects of the muco-gingival structures influencing periodontium and their treatment.
14. Treatment of all gingival and periodontal disturbances. Treatment planning phases and rationale. Different available therapeutic procedure. Healing Mechanism
15. Role of Nutrition in aetiology and treatment
16. Drugs in periodontics
17. Instrumentation
18. Splints
19. Preventive periodontics, concept of focal infections
20. Materials used in Periodontal

## 12. ORAL SURGERY

### Local Anesthesia:

1. Introduction
2. Properties of an ideal local anaesthetic drug
3. Properties of common local anaesthetic drugs in use
4. Choice of anesthesia -local or general anesthesia
5. Indications and contra indications, advantages and disadvantages of local anesthesia
6. Components of a standard local anaesthetic solution and the part played by each component
7. How does a local anaesthetic act?
8. Pre-anaesthetic medication
9. Technique of infiltration anesthesia, Nerve block anesthesia Symptoms and signs of anesthesia
10. Complications associated with local anesthesia and their management.

### General Anesthesia:

1. Properties of general anaesthetic drugs commonly used
2. Pre-anaesthetic preparation of a patient and pre-medication
3. Evaluation of a patient for general anesthesia
4. Short anesthesia in a Dental Chair Endotracheal anesthesia Intravenous anesthesia
5. Symptoms and signs of general anesthesia
6. Complications arising during the administration of general anesthesia and their management.

### Exodontia:

- 1 Objectives
- 2 Indications for tooth extraction
- 3 Pre-operative assessment
- 4 Forceps extraction
- 5 Surgical extraction (Trans-alveolar extraction)
- 6 Extraction technique under general anesthesia in the Dental Chair
- 7 Complications of tooth extraction and their management

### Oral Surgery:

1. Definition and scope
2. Diagnosis in oral surgery (a) History taking (b) Clinical examination (c) Special investigation
3. Importance of general condition of the patient in relation to oral surgery.
4. Treatment planning

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5. Sterilisation
6. Use of antibiotics in oral surgery
7. Diagnosis preoperative assessment and treatment of impacted teeth.
8. Pre-prosthetic surgery
9. Surgical aid to orthodontics
10. Oro-facial infections, their diagnosis and treatment
11. Inflammatory diseases of jawbone and their management
12. Diagnosis and management of cysts of oral cavity
13. Diagnosis and treatment of the fracture of the mandible
14. General outline of the fracture of the middle third of the facial skeleton
15. Diagnosis and treatment of benign neoplastic lesions of the oral cavity (Odontogenic and non-odontogenic)
16. Surgical procedure in relation to endodontic therapy (Apicoectomy)
17. Surgical treatment of tumour like lesions of the oral cavity including odontome
18. Diseases of maxillary sinus with special reference to oro-antral fistula
19. Management of haemorrhage in oral surgery
20. Diseases of salivary glands, Diagnosis and treatment of salivary glands
21. Surgical aspect of histo-pathological diagnosis
22. Oral surgical complications and their management
23. Diagnosis of malignant condition of oral cavity, a broad outline about the different methods of treatment
24. Diseases of temporomandibular joint such as arthrititis, hypoplasia, subluxation, dislocation, ankylosis & other causes of inability to open the mouth
25. Affliction of trigeminal and facial nerves.

### 13. PROSTHODONTICS AND CROWN BRIDGE

#### a) Complete Dentures:

1. Introduction and Scope
2. Applied Anatomy
3. Examination, diagnosis, treatment planning and prognosis
4. Principles of retention and stability
5. Principles and techniques of impression making
6. Preparation of casts, trays and temporary denture bases
7. Jaw relations and methods of registration
8. Artificial teeth, their selection and arrangements and aesthetics
9. Articulators and face bows
10. Occlusion and articulation in complete dentures
11. Processing and finishing of dentures
12. Corrections of occlusal discrepancies
13. Delivery and adjustments of complete dentures
14. Sequelae of ill-fitting dentures
15. Repair, rebasing and relining
16. Immediate denture
17. Implant dentures.

#### b) Removable Partial Dentures:

1. Introduction and scope
2. Classification
3. Examination diagnosis and treatment planning

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4. Components of removable partial denture and their function
5. Surveyors
6. Mouth preparations for partial dentures
7. Impression procedures
8. Designs of removable practical dentures and its associated problems
9. Fabrication of cast metal framework
10. Jaw relation record
11. Selection and arrangement of teeth
12. Acrylic partial denture
13. Trying in of partial dentures
14. Processing, finishing, delivery and maintenance of partial dentures
15. Immediate partial dentures

**c) Elements of Crown and Bridge Prosthesis**

1. Introduction and Definitions
2. Indication and Contra-indications
3. Examination, diagnosis and treatment planning
4. Selection and choice of abutment teeth
5. Principles of tooth reduction
6. Indications contra-indications and procedures of preparation of
7. Abutment teeth for receiving various types of retainers
8. Temporary protection of a prepared tooth
9. Gingival retractions and impression procedures
10. Construction of dies and working models direct and indirect
11. technique
12. Technique of fabrication of retainers'
13. Selection and fabrication of pontics
14. Connectors, stress breakers and assembly o fixed bridges
15. Finishing commenting and maintenance of crowns and bridge

**d) Maxillofacial Prosthesis:**

1. Splints
2. Obturators
3. Carriers

**14. PAEDODONTICS**

- I. Introduction, definition, scope and importance of paedodontics
- II. Growth and Development of Dental and Oral facial structures and Normal occlusion developmental anomalies
- III. Morphology of Dentitions and its application
  - a. Applied morphology and histology of deciduous and permanent teeth
  - b. Importance of first permanent molar
- IV. Fundamental Dental Health
- V. Biological factors responsible for maintenance of Dental and Oral Health
- VI. Contributory local factors affecting oral health, plaque etc.
- VII. Child psychology and management of child patient
- VIII. Examinations, Diagnosis and Treatment planning
- VIII. Clinical Paedodontics:

Treatment of traumatized teeth, management of the primary and mixed dentition period gingival disorders in children.

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Stomatological conditions in children. Mouth habits and their managements. Set-up of Paedodontic clinic. Toothing disorders. Developmental anomalies. Dental caries in children. Restorative Dentistry. Pulp therapy and endodontics, space maintainers.

15. **VIVA-VOICE/PERSONALITY TEST:** The candidates will be interviewed by the Commission who will have before them a record of his career. He will be asked questions on matters of general interest. The object of the interview is to assess the personality suitability of the candidate for the service post. The test is intended to judge the mental caliber of candidate. In broad terms this is really an assessment of not only his intellectual qualities but also social traits and his interest in current affairs. Some of the qualities to be judged are mental alertness, critical powers of assimilation, care and logical exposition, balance of judgment, variety and depth of interest, ability for social cohesion and leadership intellectual and moral integrity.

**APPENDIX-II**

**CONDITIONS OF ELIGIBILITY FOR APPEARING IN THE EXAMINATION:**

In order to be eligible to appear in the Competitive Examination, a candidate must satisfy the following conditions, namely:-

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| (1) <b>Minimum educational qualification</b> | A Bachelor of Dental Surgery from a recognized University and completed rotatory internship of 01 (one) year from a recognized University and registered with Dental Council of India or Dental Council of any State  |
| (2) <b>Age</b>                               | Age between 21 to 45 years for all communities of the State as per Notification No: 03/GEN/DOP Dated: 03/04/2018.   |
| (3) <b>Other qualification</b>               | <ul style="list-style-type: none"> <li>(i) Candidates should be in possession of CoI/SSC</li> <li>(ii) Should be conversant with the customs and usages of Sikkim.</li> <li>(iii) Should have knowledge of any of the recognized State languages.</li> <li>(iv) Should have local Employment Card.</li> <li>(v) In case of married women candidate, CoI/SSA of husband should be enclosed.</li> </ul> |

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