

**बी.पी. कोइराला मेमोरियल क्यान्सर अस्पताल**  
**प्राविधिक (स्वास्थ्य) सेवा, मेडिकल (एलाइड हेल्थ) समुह, डेन्टिस्ट्री उपसमुह, अधिकृत आठौं तह, डेण्टल डाक्टर**  
**पदको खुला र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम**

यस पाठ्यक्रम योजनालाई दुई चरणमा विभाजन गरिएको छ :

**प्रथम चरण :-** लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- २००

**द्वितीय चरण :-** अन्तर्वार्ता (Interview)

पूर्णाङ्क :- ३०

**परीक्षा योजना (Examination Scheme)**

**प्रथम चरण (First Phase) : लिखित परीक्षा**

Paper	Subject	Full Marks	Pass Marks	No. Questions & Weightage	Time Allowed
I	Technical Subject & Organizational Knowledge	100	40	100 × 1 = 100 (Objective Multiple Choice Questions)	1.15 hrs
II		100	40	4 × 5 = 20 8 × 10 = 80 (Subjective Descriptive Type)	3.00 hrs

**द्वितीय चरण (Second Phase)**

Subject	Full Marks	Examination
Interview	30	Oral

**द्रष्टव्य :**

- यो पाठ्यक्रमको योजनालाई प्रथम चरण र द्वितीय चरण गरी दुई भागमा विभाजन गरिएको छ ।
- प्रथम र द्वितीय पत्रको पत्रको विषयवस्तु एउटै हुनेछ ।
- प्रथम र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- लिखित परीक्षाको माध्यम भाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुनेछ ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कटौत गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कटौत पनि गरिने छैन ।
- वस्तुगत बहुवैकल्पिक हुने परीक्षामा परीक्षार्थीले उत्तर लेख्दा अंग्रेजी ठूलो अक्षर (Capital letter) A,B,C,D मा लेख्नुपर्नेछ । सानो अक्षर (Small letter) a,b,c,d लेखेको वा अन्य कुनै सङ्केत गरेको भए सबै उत्तरपुस्तिका रद्द हुनेछ ।
- बहुवैकल्पिक प्रश्नहरू हुने परीक्षामा कुनै प्रकारको क्याल्कुलेटर (Calculator) प्रयोग गर्न पाइने छैन ।
- परीक्षामा सोधिने प्रश्नसंख्या, अङ्क र अङ्कभार यथासम्भव सम्बन्धित पत्र /विषयमा दिइए अनुसार हुनेछ ।
- परीक्षामा परीक्षार्थीले मोबाइल वा यस्तै प्रकारका विद्युतीय उपकरण परीक्षा हलमा लैजान पाइने छैन ।
- विषयगत प्रश्न हुने पत्रका हकमा प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन् । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डको उत्तरपुस्तिकामा लेख्नुपर्ने छ ।
- यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ ।
- प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ ।

१३. पाठ्यक्रम लागू मिति :- २०७८/०२/१५

**Paper I & II : - Technical Subject & Organizational Knowledge**  
**Section (A): 45% Marks**

**1. GENERAL MEDICINE & GENERAL SURGERY**

- Sign, Symptoms, Diagnosis, Management and its Dental Implication

**1.1 GENERAL MEDICINE**

1.1.1 Acid Peptic Disease, Cirrhosis of liver, Hepatitis, Worm Infestation, Crohn's Diseases, Anemia, Leukemia, Purpuras, Hemophilia, Cerebro-vascular accident, Meningitis, Encephalitis, Epilepsy, Diabetes Mellitus, Thyrotoxicosis, Myxoedema, Cushing's syndrome, Addison's disease, Hyperparathyroidism, Tetany, Rheumatoid arthritis, Systemic lupus erythematosus, Osteoarthritis, Nephrotic syndrome, Enteric fever, Valvular and Ischaemic Heart Diseases, Infective endocarditis, Bleeding and clotting disorder and its management

**1.2 GENERAL SURGERY**

1.2.1 Enteric fever, Mumps, Sinus, Fistulas, Ulcer, Tumor, Shock, Peptic ulcer, Liver abscess, Pain Abdomen, Bronchial carcinoma, Head injuries, Goiter, Cellulites, Candidiasis, Urticaria, Herpes zoster, Lichen planus, Pemphigus, Drug eruption, HIV/AIDS, Diplopia, Sinusitis, Tonsillitis, Peritonsillar abscess, Ludwig's angina, Indication of tracheostomy, Maxillo-facial Fracture, TMJ Dislocation, Crush injury, Osteomyelitis, Tetanus, Infection control, Fluid and electrolyte therapy, Blood transfusion

**2. GENERAL AND ORAL PATHOLOGY**

- 2.1 Interpretations of laboratory results; Normal values of biochemical tests, Hematological tests
- 2.2 Developmental disorders of teeth, Dental caries, Pulpitis, Apical periodontitis, Hypercementosis, Gingivitis & Periodontitis
- 2.3 Cysts of the jaw : Non odontogenic and odontogenic cysts
- 2.4 Odontogenic tumors
- 2.5 Infective Stomatitis
- 2.6 Oral Premalignant Lesion, Oral Cancer
- 2.7 Common benign mucosal swelling
- 2.8 Cervical lymphadenopathy
- 2.9 Pain., anxiety and Neurological disorders of face and oral cavity
- 2.10 Diseases of temporomandibular joint
- 2.11 Signs and symptoms of anaemia and leukemia related to oral cavity
- 2.12 Haemorrhagic diseases related to oral cavity
- 2.13 Development disorders of the oral and maxillofacial region
- 2.14 Clinical features and pathogenesis of all major salivary glands

**3. ORAL AND MAXILLO-FACIAL SURGERY AND ANAESTHESIA**

**3.1 ORAL AND MAXILLO-FACIAL SURGERY**

- 3.1.1 Diagnosis of different oral conditions with its surgical management
- 3.1.2 Management of extraction –simple and complicated teeth
- 3.1.3 Management of oro-facial infections by proper incision, drainage and antibiotic therapy
- 3.1.4 Carry out biopsies of oral issues

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- 3.1.5 Diagnosis and management of the odontogenic cysts & different types of oral tissue bioopsies
- 3.1.6 Apicoecotomy
- 3.1.7 Closure of oro-antral fistula
- 3.1.8 Diagnosis and treatment of TMJ dislocation
- 3.1.9 The principles of pain control in maxillofacial surgery
- 3.1.10 Principles of radiotherapy, chemotherapy and other adjuvant therapy in the management of malignant tumors
- 3.1.11 Basic principles in the management of Facial Trauma Cases in relation with:
  - 3.1.11.1 Nutritional consideration
  - 3.1.11.2 Systemic evaluation of the traumatized patient
  - 3.1.11.3 Airway management
  - 3.1.11.4 Shock, fluid resuscitation and management
  - 3.1.11.5 Control of bleeding due to facial trauma
  - 3.1.11.6 Antibiotic and analgesic
  - 3.1.11.7 Plan and Management of fixation of jaw fracture with closed reduction using arch bar and IMF
  - 3.1.11.8 Proper splinting of dento-alveolar injury
  - 3.1.11.9 Diagnosis and classification of different types of maxillary & mandibular fractures
  - 3.1.11.10 Diagnosis of benign lesions and malignant lesions of oral cavity
  - 3.1.11.11 Post operative complications of jaw fractures
  - 3.1.11.12 Management of soft tissue wound of orb facial structure
- 3.1.12 Ameloblastoma
- 3.1.13 Oro-facial defects : Cleft lip and palate
- 3.1.14 Osteomyelitis of jaw bones

### **3.2 ANAESTHESIA**

- 3.2.1 Principles of administering safe General anaesthesia, Local anaesthesia
- 3.2.2 Pre – anesthetic drugs
- 3.2.3 Block and local anaesthesia of oral cavity
- 3.2.4 Infiltration anaesthesia of oral cavity
- 3.2.5 Post operative complication of general anaesthesia
- 3.2.6 Management of complication of intra oral local anaesthesia

## **4. ORAL MEDICINE AND DENTAL RADIOLOGY**

### **4.1 Oral Medicine**

- 4.1.1 Introduction and scope of oral medicine
- 4.1.2 Case history discussion and patient examination
- 4.1.3 Diagnostic investigations
- 4.1.4 White lesions of oral cavity
- 4.1.5 Red lesions of oral cavity
- 4.1.6 Pigmented lesions of oral cavity
- 4.1.7 Diseases of the tongue
- 4.1.8 Infections of oral cavity
- 4.1.9 Systems review – Systemic disease and their oral manifestations and dental management
  - 4.1.9.1 Cardiovascular disease

- 4.1.9.2 Respiratory disease
- 4.1.9.3 Gastro intestinal disease
- 4.1.9.4 Urinary disease
- 4.1.9.5 Blood dyscrasias – with special reference to anaemic patients, leukaemia patients and patients on anticoagulant therapy
- 4.1.9.6 Endocrine disorders
- 4.1.10 Oral premalignant lesions and oral cancer and other malignant lesion
- 4.1.11 Ulcerative and vesiculobullous lesions
- 4.1.12 Salivary gland disorders
- 4.1.13 Oro facial pain- different diagnosis and management
- 4.1.14 TMJ disorders
- 4.1.15 Immunodeficiency diseases with special reference to AIDS
- 4.2 Dental Radiology:
  - 4.2.1 X-Ray equipments, developing and processing
  - 4.2.2 Radiation hazards and protection
  - 4.2.3 Use of Periapical radiography, Bitewing radiography, Occlusal radiography, Oblique lateral radiography, O.P.G. view of mandible, Cephalometric radiography, Tomography, O.M view of maxilla, P.A. view of mandible
  - 4.2.4 Radiological interpretation of different radiological images of different bony and soft tissue, lesions of Oro-facial structure including all types of Oro-facial trauma

## 5. **PERIODONTOLOGY**

- 5.1 Definition, scope, aim and objectives of periodontology
- 5.2 Normal periodontium: Gingiva, Periodontal ligament, Cementum, Alveolar bone
- 5.3 Aging and periodontium
- 5.4 Defense mechanisms of gingiva
- 5.5 Classification of diseases of Periodontium
- 5.6 Epidemiology of periodontal diseases
- 5.7 Etiology of periodontal diseases: Dental plaque/periodontal microbiology; Material alba, food debris and stains; Dental calculus; Food impaction; Host response; Dental occlusion/ Trauma from occlusion (TFO)/bruxism and other parafunctional habits influence of systemic diseases on periodontium- diabetes, sex hormones, nutrition, AIDS, haemorrhagic diseases
- 5.8 Etiology, pathogenesis, clinical signs and symptoms and management of: Plaque associated gingivitis, Systematically aggravated gingivitis, Acute gingival infection-ANUG, acute herpetic gingivostomatitis, pericoronitis, Desquamative gingivitis, Allergic gingivitis, Gingival enlargement, Gingival abscess, Periodontal pocket
- 5.9 Periodontitis: Adult periodontitis, Rapidly progressive periodontitis, Early onset periodontitis, Juvenile periodontitis associated with systemic diseases, Periodontal abscess
- 5.10 Clinical diagnosis and Diagnostic aids, Prognosis, Treatment plan and rationale for periodontal treatment, Periodontal treatment of medically compromised patients
- 5.11 General principles of periodontal therapy
- 5.12 Definition- Periodontal regeneration, repair, new attachment, Re attachment
- 5.13 Plaque control : mechanical and chemical

- 5.14 The periodontal instrumentarium, Principles of periodontal instrumentation
- 5.15 Anti-microbial and other chemotherapeutic agents in periodontal therapy
- 5.16 Coronoplasty in periodontal therapy
- 5.17 General principles of periodontal surgery, root planning, Gingival curettage, Gingivectomy, Flap surgery
- 5.18 Resective osseous surgery: Osseous defects and osseous surgery including bone grafts
- 5.19 Reconstructive osseous surgery: Root conditioning /guided tissue regeneration
- 5.20 Furcation involvement and management
- 5.21 Endo-perio therapy
- 5.22 Mucogingival surgery
- 5.23 Periodontal splints, Periodontal pack, Dentinal hypersensitivity, Dental implant
- 5.24 Prosthetic and restorative procedures in management of periodontal disease
- 5.25 Maintenance phase of periodontal therapy or supportive periodontal treatment

**Section (B): 45% Marks**

**6. ORTHODONTICS**

- 6.1 Definition, scope and objectives of orthodontia
- 6.2 Indication for orthodontics treatment
- 6.3 Limitation of orthodontic treatment
- 6.4 Growth and development: Jaws, Teeth, Face, Skull
- 6.5 Occlusion
- 6.6 Normal development of oral functions: Mastication, Swallowing, Speech, Occlusal function
- 6.7 Normal occlusion: Its development, Characteristics and variation
- 6.8 Genetics-applied to orthodontics
- 6.9 Malocclusion: Classification, Etiology
- 6.10 Orthodontic records; History and examination; Study models
- 6.11 Radiography
- 6.12 Preventive and interceptive orthodontics
- 6.13 Extractions in orthodontics
- 6.14 Orthodontic appliances: Removable, Functional, and Fixed
- 6.15 Tissue response to orthodontic tooth movement
- 6.16 Stability and retention
- 6.17 Oral surgery for orthodontic patients
- 6.18 Materials related to orthodontics

**7. DENTAL MATERIAL**

- 7.1 Aim and scope
- 7.2 Structure and behavior of matters, Biological consideration,
- 7.3 Physical and mechanical properties of dental materials
- 7.4 Gypsum products
- 7.5 Impression materials: Impression compound, ZnO-Eugenol, Agar-agar, Alginate, Rubber base impression materials
- 7.6 Synthetic resins: Properties; As denture base material; Repair and relined material; Soft liner; Tissue conditioners
- 7.7 Resins as restorative materials: Unfilled and filled resins, Light cure, Dentin bonding agent, Acid etch

- 7.8 Metal alloys: Dental amalgam alloys, Dental casting gold alloys, Stainless steel, Chrome cobalt alloy, Nickel titanium alloy, Titanium alloy, Vitallium
- 7.9 Waxes: different types of dental waxes used in dentistry
- 7.10 Welding and Soldering
- 7.11 Dental cement: Zinc Oxide Eugenol, Zinc phosphate, Polycarboxylate, Glass Ionomers, Cavity liners, Cavity varnishes, Calcium hydroxide
- 7.12 Dental porcelain: Porcelain fused to metal, porcelain furnace and fusing
- 7.13 Abrasive and polishing agents

## 8. **PROSTHODONTICS AND CROWN AND BRIDGE**

### 8.1 Prosthodontics

- 8.1.1 Examination, diagnosis, treatment planning and prognosis
- 8.1.2 Retention and stability; Impression making
- 8.1.3 Preparation of casts, trays and temporary denture bases
- 8.1.4 Methods of jaw registration
- 8.1.5 Identification of artificial teeth : Selection, arrangement and aesthetics
- 8.1.6 Complete denture : Principles of occlusion and articulation in complete dentures; Trial in complete dentures; Steps of processing and finishing denture; Correction of occlusal discrepancies; Steps in delivery and adjustments of complete dentures; Sequelae of ill fitting dentures; Rebasing and relining of dentures
- 8.1.7 Immediate dentures, Implant dentures, Obturators
- 8.1.8 Partial Dentures : Scope of removable partial dentures; Classification of removable partial dentures; Components removable partial dentures; Mouth preparation for removable partial dentures; Impression making; Designs of removable partial dentures and associated problems; Principles on fabrication of cast metal framework; Jaw relation records, Selection and arrangement of teeth; Trial of partial dentures; Steps of processing, finishing, delivery and maintenance of partial dentures; Uses of immediate partial dentures

### 8.2 CROWN AND BRIDGE

- 8.2.1 Indication and Contra-indication
- 8.2.2 Examination, diagnosis and treatment planning
- 8.2.3 Principles of selection and choice of abutment teeth
- 8.2.4 Principles of tooth reduction
- 8.2.5 Preparation of abutment teeth
- 8.2.6 Temporary protections of prepared tooth
- 8.2.7 Gingival retractions and impression procedures
- 8.2.8 Construction of dies and working methods, direct and indirect techniques

## 9. **CONSERVATIVE AND ENDODONTICS**

### 9.1 CONSERVATIVE

- 9.1.1 Scope of conservative Dentistry and Endodontics; Patient examination, diagnosis and treatment planning in Conservative and Endodontics including various diagnostic aids
- 9.1.2 Instruments and Equipment used in Conservative and Endodontics : Hand instruments, Rotary instruments
- 9.1.3 Sterilization in Conservative dentistry and Endodontics
- 9.1.4 Clinical significance of dental anatomy, histology, physiology and occlusion

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9.1.5 Dental caries

9.1.6 Fundamentals in tooth preparation : Nomenclature of teeth; Caries terminology; Tooth preparation terminology; Principles of tooth preparation

9.1.7 Principles of isolation and moisture control

9.1.8 Pain control in Conservative and Endodontics

9.1.9 Cavity preparation for various types of restorative materials : Amalgam, Composite, Glass Ionomer Cement, Cast restoration

**9.2 ENDODONTICS**

9.2.1 Pulp development, structure and function

9.2.2 Periapical pathology

9.2.3 Tooth morphology and access opening

9.2.4 Working length determination

9.2.5 Cleaning and shaping the root canal system

9.2.6 Obturation of the root canal system

9.2.7 Traumatic injuries : Diagnosis and management

9.2.8 Root resorption

9.2.9 Surgical endodontics

9.2.10 Pulp capping and pulpotomy

9.2.11 Bleaching of teeth

9.2.12 Restoration of endodontically treated teeth

9.2.13 Endo – Perio lesions

9.2.14 Endodontic failures and retreatment

9.2.15 Endodontic emergencies

9.2.16 Drugs used in Conservative and Endodontics

9.2.17 Irrigants and medicaments

**10. PAEDODONTICS AND COMMUNITY DENTISTRY**

**10.1 PAEDODONTICS**

10.1.1 Definition, Scope and importance of Paedodontics

10.1.2 Morphology of dentitions and its application

10.1.3 Applied morphology and histology of deciduous and permanent teeth

10.1.4 Importance of 1st permanent molar

10.1.5 Anomalies of developing dentition: tooth eruption, tooth exfoliation, tooth number, tooth structure, tooth color

10.1.6 Orofacial growth and its modification

10.1.7 Management of common dental and oral diseases in children

10.1.8 Diagnosis and management of orodental trauma in child patient

10.1.9 Oral manifestation of systemic disease in children

10.1.10 Paedodontic treatment plan

10.1.11 Psychological development and behavioural attitude in paediatric group

10.1.12 Common oral surgical procedures undertaken in children

10.1.13 Sedation and anaesthesia used in children for dental procedures

10.1.14 Pulp therapy in primary and young permanent tooth

10.1.15 Space maintainer : Indication, Classification and techniques of fabrication

10.1.16 Management of pain, anxiety and stress in child patient

10.1.17 Orthodontic treatment in primary dentition

## 10.2 COMMUNITY DENTISTRY

- 10.2.1 Concept of health and attitude towards illness
- 10.2.2 Community survey and family case study
- 10.2.3 Doctor, patient relationship
- 10.2.4 Epidemiology of oral diseases in Nepal
- 10.2.5 Fluorides : fluoride mechanisms, flurosis, systemic fluorides, topical fluorides
- 10.2.6 Food which prevent dental decay; Concept of health education; Motivation and incentives; Methods and media of oral health education; Nutrition and health; Growth and development; Breast feeding; Motivation to community people and school teachers

### Section (C): 10 % Marks

#### 11. Concept of management

- 7.1 Management: concept, scope, functions, principles, and its practices
- 7.2 Hospital Management : concept, scope, function, principle and its practices
- 7.3 Communication skills, problem solving and decision making
- 7.4 Planning, organizing, monitoring and evaluation in health sector
- 7.5 Participative management
- 7.6 Social justice and social security system in Nepal
- 7.7 Positive attitude and self-development
- 7.8 Demographic characteristic of Nepal

#### 12. Organizational Knowledge and General Health Issues

- 8.1 B.P.Koirala Memorial Cancer Hospital : History, organizational structure, functions, roles, services, problems and challenges
- 8.2 National Health Policy and National Oral Health Policy
- 8.3 B.P.Koirala Memorial Cancer Hospital related act and regulations
- 8.4 Health Service Act, 2053 and Health Service Regulation, 2055
- 8.5 Professional council related acts and regulations
- 8.6 Professional and medical ethics