

नेपाल सरकार  
गृह मन्त्रालय  
प्रहरी प्रधान कार्यालय  
(मानवश्रोत एवं प्रशासन विभाग, भर्ना तथा छनौट महाशाखा)  
नक्साल, काठमाण्डौं ।

प्राबिधिक प्रहरी नायव निरीक्षक (DENTAL LABORATORY TECHNICIAN) समूहको खुला प्रतियोगितात्मक परीक्षाको पाठ्यक्रम ।

पाठ्यक्रमको रुपरेखा:- यस पाठ्यक्रमको आधारमा निम्नानुसार दुई चरणमा परीक्षा लिईने छ :-

प्रथम चरण:- लिखित परीक्षा (Written Examination)

पूर्णाङ्क :- १५०

द्वितीय चरण:- अन्तर्वार्ता (Interview)

पूर्णाङ्क :- २५

प्रथम चरण:- लिखित परीक्षा योजना (Examination Scheme)

पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या	समय
प्रथम	DENTAL LABORATORY TECHNICIAN	१००	४०	वस्तुगत बहुउत्तर (Multiple Choice)	५०x२ = १००	४५ मिनेट
द्वितीय	नेपाल प्रहरी सेवा सम्बन्धी	५०	२०	वस्तुगत बहुउत्तर	१०x१ = १०	१ घण्टा
				बिषयगत	लामो उत्तर १x१० = १० छोटो उत्तर ६x५ = ३०	१० मिनेट

द्वितीय चरण

परीक्षाको किसिम	पूर्णाङ्क	परीक्षा प्रणाली
व्यक्तिगत अन्तर्वार्ता	२५	मौखिक

द्रष्टव्य:

(१) पाठ्यक्रममा रहेका पाठ्यांशहरुबाट देहाय अनुसार प्रश्नहरु सोधिने छन् ।

पाठ्यक्रमका एकाइ	A.1	A.2	B.1	B.2	Total
प्रश्न संख्या	5	10	15	20	50

२. वस्तुगत बहुउत्तर (Multiple Choice) प्रश्नहरूको उत्तर सही दिएमा प्रत्येक सही उत्तर बापत पुरा अङ्क प्रदान गरिनेछ भने गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कट्टा गरिनेछ। तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन।
३. यस पाठ्यक्रममा जेसुकै लेखिएको भएता पनि पाठ्यक्रममा परेका ऐन, नियमहरू परीक्षाको मिति भन्दा ३ (तीन) महिना अगाडि (संशोधन भएका वा संशोधन भई हटाइएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा रहेको सम्झनु पर्दछ।
४. लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र अन्तर्वार्तामा सम्मिलित गराइनेछ।
५. पाठ्यक्रम लागू मिति:-

नेपाल प्रहरी

नेपाल प्रहरी प्राविधिक सेवा, डेन्टिस्ट्री समूह  
प्रहरी नायव निरीक्षक (डेण्टल ल्याव टेक्निसियन) को प्रतियोगितात्मक लिखित परीक्षाको पाठ्यक्रम

## **DENTAL LABORATORY TECHNICIAN**

Entry Qualification - Essential: SLC or equivalent

Duration of Course: Two years with minimal 1 year experience

### **Syllabus - DENTAL LABORATORY TECHNICIAN**

**Duration: 2 years with one year of internship**

#### **A.1. Basic Science**

- 1.1. Safety precautions during handling chemical, laboratory apparatus, equipments and machineries.
- 1.2. Study of density, specific gravity, properties of matter, cohesion, viscosity, elasticity, diffusion and osmosis.
- 1.3. Temperature, temperature Measurements, temperature measuring instruments & thermostats
- 1.4. Boyle's Law and Charles Law, unit of heat, thermal capacity, specific heat, latent heat, melting point, expansion of solids, liquids and gases by heat. Gas pressure and hydraulic pressure, study of properties of vapours, conduction, convection and radiation
- 1.5. Study of electro – technology applied to dental work.
  - 1.5.1. Basic Electricity, voltage, current, Ohm's Law, Krichhop's Law, AC, DC, Electrical Measurements.
  - 1.5.2. Electrical safety, Low voltage systems, Isolation Transformer, Necessity of Earthing.
- 1.6. Knowledge about motors, different types & uses.
- 1.7. Study of electrical features, heaters, temperature cantilever, electro plating, electroforming and anodising.
- 1.8. Study of work, power and energy, power, friction, momentum, centre of gravity, types of lever, stress, strain, shearing strain, torsion, mechanical properties of metals.
- 1.9. Knowledge of atmosphere.
  - 1.9.1. Physical and chemical changes of elements, mixtures and compounds. Oxides, burning, rusting.
  - 1.9.2: Electrolysis, ionic theory of solution, electro potential, Electroplating
- 1.10. General characteristics of common metal used in the dental work and their compounds.
- 1.11: Alcohol, ethers, aldehydes and ketones.

1.11.1. Fatty acids and their more important derivatives, amines, carbohydrates, fats and proteins.

1.11.2. Benzenes and its homologues.

## **A. 2. Oral Anatomy & Physiology**

2.1: Introduction

2.1.1: Definition and terminologies

2.2: Skeleton system

2.2.1: Review of skeleton of head and neck

2.2.2: Maxilla

2.2.3: Maxillary sinus

2.2.4: Mandible

2.3: Muscular System

2.3.1: Review on facial muscles

2.3.2: Muscles of mastication

2.4: Temporo-mandibular joint

2.5: Oral cavity

2.6: Periodontium

2.6.1: Gingiva

2.6.2: Periodontal ligament

2.6.3: Cementum

2.6.4: Alveolar bone

2.7: Tooth

2.7.1: Growth and development of tooth

2.7.2: Anatomy of tooth

2.7. 3: Occlusion

2.7.4: Tooth numbering system

2.8: Physiology of mastication & deglutition

2.9: Salivary gland

2.9.1: Parotid, submandibular and sublingual gland

2.9.2: Saliva

2.10: Neurology

## **B.1. Dental Materials, Instruments & Dental Assisting**

1.1: Introduction & biological consideration of dental materials

1.2: Gypsum Products

1.3: Impression materials

1.3.1: Introduction

1.3. 2: Impression compound

1.3.3: Zinc oxide eugenol impression paste

1.3.4: Alginate

1.3.5: Elastomeric impression materials

1.4: Composite resins

1.5: Dental amalgam

1.6: Dental cements

1.6.1: Zinc oxide-eugenol

1.6.2: Zinc phosphate

1.6.3: Glass ionomer

1.6.4: Zinc polycarboxylate

1.6.5: Calcium hydroxide

1.7: Dental waxes

1.8: Dental models, cast and die materials

1.9: Dental instruments

1.10: Dental assisting

1.10.1: Dental chair

1.10.2: Chair-side assisting

1.11: Maintenance of dental equipment and instruments

1.11.1: Cleaning

1.11.2: Maintenance and servicing of dental equipment

1.11.3: Sterilization of dental instruments

1.11.4: Dental waste disposal

1.12: Metallurgy about metallurgical terms. S

1.12.1. study in metals used in dentistry such as gold, silver, copper, zinc, tin, lead and aluminium.

1.12.2. denture base materials, both for cold curing and heat curing, tooth materials, base plate and other materials used in dentist

1.13: Study of alloys used in dentistry i.e. casting of silver alloys, gold, stainless steel etc.

1.14: Heat treatment, annealing and Solders, flexes, anti-flexes.

1.15: Tarnish and corrosion.

1.16: Electroplating (electric deposition). Study of Principles of wire bending

1.17: Dental Porcelain

## **B.2. Laboratory technology**

2.1. Impression:- Preservation and Boxing.

2.1.1. Cast:-Preparation, trimming, including orthodontic casts.

- 2.1.2. Construction of special trays – spacers. Adjustments, mounting of casts.
- 2.2. Setting of teeth.
- 2.3. Flasking, dewaxing, packing, curing and deflasking.
- 2.4. Finishing and polishing of dentures.
- 2.5. Additions, repairs, relining and reversing of dentures.
- 2.6. Making of Acrylic teeth.
- 2.7. Wire bending. wrought clasps and lingual bars preparation.
- 2.8. Setting of teeth and completion of denture on metals skeletons
- 2.9. Stainless steel wire preparation of clasps springs and arch wires for orthodontic appliance.
- 2.10. Preparation removal orthodontic appliance, activators, retention appliances and oral screen.
- 2.11. Construction of fixed orthodontic appliances, bands, tubes and arches
- 2.12. Soldering and spot welding
- 2.13. Casting machines,
- 2.14. Centrifugal and pressure casting machines, furnaces
- 2.15. PFM crowns and ceramic crowns.
- 2.16. Fixed partial dentures – metal ceramics and all ceramics.
- 2.17. Veneers
- 2.18. Practice on Soldering and spot welding –Soldering of clasps, togs, strengtheners and lingual bars.
- 2.19. Tooth carving in wax and plaster
- 2.20. Cast preparation, trimming, including orthodontic casts.
- 2.21. Cast duplication – various methods.
- 2.22. Principles of bridge work – types of abutments, abutment & pontics.
- 2.23. Bite blocks – base plates and wax rims.
- 2.24. Articulators Occlusal plane, protrusive balance, working bite, balancing bite, curve of space, compensating curve, lateral curve.
- 2.25. Principles of selection of teeth. Immediate denture construction.
- 2.26. Kennedy's classification of partial dentures.
  - 2.26.1. Principles of partial denture, design, clasp surveyor, surveying, path of insertion and removal.
  - 2.26.2. Establishment of clasp seat, clasp's parts, classification, function and reciprocation.
- 2.27. Principles of wire bending.
  - 2.27.1. Preparation of wrought clasps, occlusal rests and lingual bars
- 2.28. Casting machines: Centrifugal and pressure casting machines, furnaces, principles of casting.
- 2.29. Casting techniques of partial denture (skeleton) clasps, bars, occlusion rest.

- 2.30. Mechanical principles of orthodontic appliances, anchorage, force, tissue changes and retention.
- 2.31. Use of various types of expansion screws.
- 2.32. Method of removal orthodontic appliances, activators, retention appliance and oral screen.
- 2.33. Study of Construction of fixed orthodontic appliances, bands, tubes and arches.
- 2.34. Soldering and spot welding – soldering of clasps and lingual bars.
- 2.35. Inlays and crowns-classification and construction - facing and backings, casting procedures.
- 2.36. Practical knowledge on implant supported prosthesis.
- 2.37. Knowledge on Maxillofacial prosthesis

**Compulsory 1 yr internship upon completion of the course**

## वस्तुगत बहुउत्तर नमूनमा प्रश्नहरू (Sample Questions)

1. Cavities beginning in the proximal surfaces of bicuspid and molars are  
a) Class 1                      b) Class 2                      c) Class 4                      d) Class 6

**Correct Answer: b**

2. Cements in dentistry can be used as  
a) Liners    b) Bases    c) Root Canal Fillers    d) All of the above

**Correct Answer: d**

3. Bacteria responsible for initiation of dental caries is  
a) Actinomyces    b) Strep. Mutans    c) Lactobacillus    d) Strep. Viridans

**Correct Answer: b**

4. Loss of tooth surface because of chemomechanical action is known as  
a) Abrasion                      b) Erosion                      c) Abfraction                      d) Attrition

**Correct Answer: b**

5. The operator should stand at a distance of \_\_\_\_\_ while taking x-rays  
a) 6 feet                      b) 8 feet                      c) 10 feet                      d) 2 meters

**Correct Answer: a**

6. Hard deposits found on tooth and appliances in an uncleaned mouth is called  
a) Plaque                      b) Calculus                      d) Materia alba                      d) None

**Correct Answer: b**

7. The mandibular molars generally have  
a) 2 roots & 2 canals                      b) 2 roots & 3 canals  
c) 3 roots & 2 canals                      d) 3 roots & 4 canals

**Correct Answer: b**

-समाप्त-