

DETAILED SYLABUS FOR THE POST OF DENTAL MECHANIC
GRADE II IN HEALTH SERVICE & MEDICAL EDUCATION
SERVICE

CAT NO: 496/2023, 497/2023

	Topic	Marks
1	Dental Mechanics -Complete denture	15
2	Dental Mechanics-Removable Partial Denture	15
3	Dental mechanics-Fixed Partial Denture	15
4	Dental Mechanics -Orthodontics	10
5	Dental materials	10
6	Metallurgy	10
7	Applied Dental Anatomy	10
8	Applied Physics & Mechanics	5
9	Applied Chemistry	5
10	Basic knowledge of computers and medical records management	5
	Total	100

1. DENTAL MECHANICS (COMPLETE DENTURE)

Infection control measures for impressions and models

Impression Preservation and Boxing- Beading.

Cast: Preparation, Trimming,.

Cast duplication - various methods.

Construction of special trays - spacers .

Bite blocks- base plates and wax rims.

Articulators: Classification, daily uses, and care of articulators.

Adjustments, Mounting of casts.

Articulation, Occlusal plane, protrusive balance, working bite, balancing bite, curve of space, compensating curve, lateral curve.

Principles of selection of teeth.

Setting of teeth and wax finishing.

Flasking, Dewaxing, Packing, curing and Deflasking.

Finishing and polishing of dentures.

Additions, repairs, relining and rebasing of dentures.

Immediate denture construction.

2. DENTAL MECHANICS (REMOVBABLE PARTIAL DENTURE)

Making of acrylic teeth. Kennedy's classification of partial dentures.

Principles of partial denture, design, clasp surveyor, surveying, path of insertion and removal. Establishment of clasp seat. Clasp's parts, classification, function and reciprocation. Casting techniques of partial denture (Skeletal) Clasps, bars, occlusion rest.- Setting of teeth and completion of dentures on metal skeletons.

Principles of wire bending, Preparation of wrought clasps, occlusal rests and lingual bars.

3. DENTAL MECHANICS (FIXED PARTIAL DENTURE)

Fpd classification.,components of Fpd.,Cast duplication.,Die preparation,Wax pattern fabrication,investing,burn out, Principles of casting..

Casting machines: Centrifugal and pressure casting machines, Furnaces, deinvesting finishing polishing

Implant supported Prosthesis Ceramic, laminates and Veneer

Porcelain firing techniques

4. DENTAL MECHANICS (ORTHODONTICS)

Mechanical principles of Orthodontic appliances, anchorage, force, tissue changes and retention.

Stainless steel wire-preparation of clasps, springs, and Arch wires for Orthodontic appliances.

Use of various types of expansion screws

Preparation of removable Orthodontic appliances, Activators, Retention appliances and Oral screen.

Construction of fixed Orthodontic appliances, bands, tubes and arches. Soldering and spot welding-

Soldering of clasps, tags, Strengtheners and lingual bars.

5. DENTAL MATERIALS

Gypsum products

Investment Materials,

All Impression Materials,

Tray Materials,

Denture Base Materials, both for cold curing and heat curing, Tooth Materials Waxes,

Base Plates

Zinc Oxide eugenol, Amalgum

Dental Luting Cements

Dental Ceramics and indirect resin restoration materials

Dental implant materials

Maxillofacial Prosthetic materials

6. DENTAL METALLURGY

(a) Metals used in Dentistry particularly Gold, Silver, Copper, Zinc, Tin, Lead and Aluminium.

(b) Alloys used in Dentistry particularly, Casting Gold Wrought Gold Silver Alloys, Stainless Steel, Base metal alloys Chrome Cobalt Alloys.

Heat treatment-annealing and tempering.

Solders, Fluxes, Anti Fluxes.

Tarnish and Corrosion.

7. APPLIED ORAL-ANATOMY

Elementary anatomy and structure of denture/bearing area.

Human dentition and occlusion.

Functions of teeth and morphology of Crowns of teeth.

Muscles of mastication and facial expression

Mastication deglutition and phonation.

Movements of temporomandibular joint.

8. APPLIED PHYSICS AND MECHANICS

Specific gravity, density, properties of matter, including cohesion, capillarity, surface tension viscosity, elasticity, diffusion and osmosis.

Heat: Temperature and its measurements Thermometers and Pyrometers. General account of expansion by heat of solids, liquids and gases, Thermostats, Pressure gas and hydraulic. Boyle's and Charles Laws. Unit of heat, thermal capacity and specific Heat, Change of State; Latent heat; Melting point; Properties of vapours conduction, convection and radiation.

Principles of electro-technology applied to dental work room, small motors, constructional features and characteristics, electric furnaces, heaters, thermostats, pyrometers, spot welders, electroplating, electro-forming, and anodizing, wiring regulations relating to low voltage supplies. Forces, Parallelogram and triangle of forces. Moments, Couples, Centre of gravity, Principles of lever and cantilever work, Energy; Power, Friction, Inclined plane, Screw Stress, Strain, Shearing Strain, Torsion, Bending movements, Strength. And stiffness of materials.

9. APPLIED CHEMISTRY

Distinction between physical and chemical change; elements, mixtures, and compounds; composition of the atmosphere; Oxygen oxides, burning and rusting; water solvent properties and crystallization; action of water on metals; composition of water hydrogen; Laws of chemical combination; meaning of chemical symbols valency; simple chemical equations; acids, bases and salts.

Electrolysis, The ionic theory of solution. The electropotential series, electroplating, General characteristics of the metals including an elementary study of the common metals and their alloys with special reference to those used in the dental work room.

Alcohol, ethers, aldehydes and ketones, fatty acids and their more important derivatives, amines. Simple treatment of carbohydrates, fats and proteins,. General characteristics of aromatic substances. Synthetic resins and plastics used in Dentistry.

10. BASIC KNOWLEDGE OF COMPUTERS

General office routine economics, record-keeping services, Professional referrals and computing skill;

Record keeping of materials intended and audit of use.

Receipt and dispatch of work from clinicians

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper