ANDHRA PRADESH PARA MEDICAL BOARD

HYDERABAD

(Established Under the Andhra Pradesh Para Medical Board Act, 2006)

(A.P. Act No.38 of 2006)

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Syllabus for

DIPLOMA IN AU迪METY TECHNICIAN COURSE
(TWO YEARS COURSE)

B.N.S. Kumar
Secretary
In view of representation from the Faculty the Syllabus for the 1st year in all Para medical courses is modified accordingly and kept on website.

DIPLOMA IN AUDIOMETRY TECHNICIAN COURSE  
(TWO YEARS COURSE)

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## Syllabus for Second Year

### Paper-I
- A) Anatomy of the Human Ear
- B) Cross section of the Cochlea
- D) Central Auditory Processing Disorder

### Paper-II
- A) Speech and Language Development.
- B) Conductive Hearing Loss, Sensorineural Hearing Loss
- C) Mixed Hearing Loss
- D) Non-organic Hearing Loss, Speech and Language Development.

### Paper-III
- A) Audiogram, Checking Audiometer Functions
- B) Screening Audiograms, Four Things Needed for Successful Screening, Screening Procedures (Play Audiometry), Play Audiometry Conditioning
- C) CHDP Screening Audiogram
Basics of Anatomy

1. Introduction to Human Anatomy
2. Cell- Tissues Properties, Different Tissues
3. Digestive System & Hepatobiliary System
4. Respiratory System
5. Cardio Vascular System
6. Lymphatic System
7. Bones and Joints
8. Nervous System
9. Endocrine System
10. Sense Organs
11. Excretory System
12. Reproductive System

Basics of Physiology

1. Introduction to Human Physiology
2. Blood
3. Cardio Vascular System
4. Lymphoid System
5. Digestive System
6. Respiratory System
7. Nervous System
8. Endocrine System
9. Excretory System
10. Reproductive System
11. Sense Organs
Basics of Bio – Chemistry

1. Introduction to Basics of Bio-chemistry including code of ethics for Medical Lab Technicians and Medical Lab Organization.

2. Reception, Registration and bio-chemical parameters investigated.

3. Glassware and plastic ware used in a bio-chemical laboratory.
   a. Glassware:
      1) Types of glass and composition.
      2) Types of glassware used, their identification, application & uses.
      3) Cleaning, drying, maintenance and storage of glassware.
   b. Plastic ware: Brief outline

4. Instrumental methods of Bio-chemical analysis.
   a. Colorimetry:
      Visual and photoelectric methods, instrumentation, principle & laws involved construction, operation, care and maintenance, applications.
   b. Spectrophotometry
      Principle and theory, types, construction, & applications

5. Basic lab operations like
   a. Separation of solids from liquids
      1. Centrifugation: Principle, Different types of centrifuges care and maintenance, applications.
      2. Filtration using funnel.
      3. Weighing : Different types of balances used, care and maintenance.
      4. Evaporation
      5. Distillation
      6. Refluxing
7. Drying different salts and dessicotion.

6. Water Chemicals and related substances
   a. Purity of chemicals
   b. Corrosives
   c. Hygroscopic Substance

7. Prevention, Safety and first aid in lab accidents.

8. Collection of Specimens
   a. **Blood**: Types of Specimens, Collection, Precautions during collection, processing and preservation.
   b. **Urine**: Types of Specimens, Collection, Precautions during collection, Processing and Preservation.


10. Units of measurements

11. **Solutions**: Types based on solute and solvent, Types based on method of expressing concentration, calculations.

12. **Carbohydrates**: Definitions, Biological importance, Acid value, iodine value, saponification value.

13. Amino acids and Proteins Definition, Biological importance, Classification, Qualitative tests.

14. **Diagonistic tests**: Blood sugar, Glucose tolerance test, Blood urea, Serumuric acid, Serum creatinine.

15. **Vitamins and Minerals**

   a. **Vitamins**: 
      Water Soluble vitamins, Fat Soluble vitamins, Sources, Daily requirements, Deficiency diseases.

   b. **Minerals**:
      Sources, Daily requirements, Deficiency diseases.
Paper-II

Basics of Pathology

Introduction to Pathology in brief

1. Urine – Analysis – Physical Examination – specific gravity PH, reaction, colour.
   Chemical Examination – Sugar Albumin, bile salts, bile Pigments etc.
   Microscopic, Sediment for RBC, WBC, Epithelial cells, casts, crystals, parasites.
   Preparation of Reagents, procedure and principle of tests.

2. Sputum Analysis – Physical Examination, Preparation and staining smear for Microscopic Examination.

4. **Body Fluids** – Differential count of Peritoneal, pericardial, pleural fluids and CSF, charging chamber, Identifying and counting the cells.

**Basics of Microbiology**

I. **Introduction to Microbiology in brief**

Definition, 
History

II. **Microscopy**

a) Principle working and maintenance of compound Microscope.  

**History**

**Types of Microscope:** (a) Light Microscope, (b) DGI, (c) Fluroscent, (d) Phase contrast.

(e) **Electron Microscope**: a). Transmission, b) Scanning, Principles of operational mechanisms of various types of Microscopes.

III. **Sterilization and disinfection** – classification and Methods of sterilization.

**Sterilization: Definition, types and principles of sterilization methods:**

(a) Heat (dry heat, moist heat with special reference to autoclave, (b) Radiation, (c) Filtration, efficiency testing to various sterilizers.

**Antiseptics and Disinfectants:**

Definition, types and properties, mode of action, uses of various disinfectants, precautions while using the disinfectants, qualities of a good disinfectants, testing efficiency of various disinfectants.
1) Principle and Methods of sterilization by heat
   a) By Dry Heat, flaming, Red Heat, Hot air oven, incineration.
   b) By Merit Heat-pasteurization, Inspissation, tyndalisation, autoclave.

2) Filtration Methods

3) Ionising Radiation – Disinfection, Mode of action and uses of important
   chemical disinfections – Phenol and Phenolic compounds, alcohols,
   halogens, dyes and acids and alkalies.

4) Gaseous Methods of sterilization.

IV. Cleaning, drying & Sterilization of Glassware disposal of contaminated
    material i.e. clinical infective material inoculated culture media. Handling and
    Disposal of Biomedical waste.

V. Biomedical waste management in a Microbiology Laboratory : types of
    the waste generated, segregation, treatment, disposal.

VI. Morphology and classification of Bacteria Sp. of cell, capsule, flagella, spore,
    Anaerobic Methods of cultivation of Bacteria.
A. Hospital Awareness

A brief idea of hospital as an organization management different units of a hospital effective communication skills, communication channel

- Maintenance of records
- Effective leadership
- General patient care
- Medical terminologies
- Vital signs
- Unit preparation
- Transporting & Transferring patients
- Sterilization Techniques
- Control of infection
- Medication – Oral & parenteral
- Admission – Discharge procedure
- Bandages

Practicals: Posted in ward & taught clinically

A. Surgical Department

Familiarization of different tubes

1. Drainage tube
2. Post Operative Exercises
3. Post OP Management of Patient
4. Shock of Management
5. Changing Surgical Dressing.

1. Preoperative preparation of patient
2. Preanesthetic preparation
3. Assisting in operation
4. Anaesthesia
5. CSSD
1. Recovery room
2. Movement of papers
3. Scheduling of theaters
4. Supplying of articles
5. Specific area practices
   - As scrub nurse
   - As circulating nurse
Communication and Computer Skills, Audio & Visual Aids.

COMMUNICATION
- Process
- Types of communication
- Strategies for effective Communication
- Barriers of communication

SOFT SKILLS
- Presentation with the use of visual aids such as power point
- Conversation
- Extempore speech, usage of effective language for communication of health work.
- Case studies and situational analysis
- Survey and Reporting

COMPUTER
- Computer basic
- MS – Office
- MS – Word
- MS – Excel
- MS – Power Point

INTERNET CONCEPTS
- Browsing
- Down-Loading
- Use of Slide Projector
PRACTICALS

1. Monitoring of vital signs, Spo2
2. ABG analysis
3. Types of Anesthesia required for different types of surgeries
4. A regular check of cannula and drains
5. Maintain records and reports
6. Transportation of patient to SICU
7. Suctioning of Endotracheal tube / Tracheostomy tube
8. After care of equipment
9. Mechanical ventilation – Settings and modes