

**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 AUDIOMETRY TECHNICIAN COURSE  
(TWO YEARS COURSE)**

**B.N.S. Kumar  
Secretary**

In view of representation from the Faculty the Syllabus for the 1<sup>st</sup> year in all Para medical courses is modified accordingly and kept on website.

<b>DIPLOMA IN AUDIOMETRY TECHNICIAN COURSE (TWO YEARS COURSE)</b>	
<b>Syllabus for First Year</b>	
<b>Paper-I</b>	<b><u>BASIC HUMAN SCIENCES</u></b>  A) Basics of Anatomy B) Basics of Physiology C) Basics of Biochemistry D) Basics of Bio-statistics
<b>Paper-II</b>	A) Basics of Pathology B) Basics of Blood Banking C) Basics of Microbiology D) Basics of Central Sterilization Services.
<b>Paper-III</b>	A) Hospital Awareness B) Familiarization of different tables/tubes in surgical department, Surgical Awareness, preparation of patient for surgery. C) Patient related services. D) Communication and Computer Skills, Audio & Visual Aids.

**DIPLOMA IN AUDIOMETRY TECHNICIAN COURSE  
(TWO YEARS COURSE)**

**Syllabus for Second Year**

<b>Paper-I</b>	<ul style="list-style-type: none"><li>A) Anatomy of the Human Ear</li><li>B) Cross section of the Cochlea</li><li>C) Audiometer, Auditory Pathway of the Central Nervous System, CHDP Guidelines of Audiometric Testing.</li><li>D) Central Auditory Processing Disorder</li></ul>
<b>Paper-II</b>	<ul style="list-style-type: none"><li>A) Speech and Language Development.</li><li>B) Conductive Hearing Loss ,Sensorineural Hearing Loss</li><li>C) Mixed Hearing Loss</li><li>D) Non organic Hearing Loss, Speech and Language Development.</li></ul>
<b>Paper-III</b>	<ul style="list-style-type: none"><li>A) Audiogram, Checking Audiometer Functions</li><li>B) Screening Audiograms, Four Things Needed for Successful Screening, Screening Procedures (Play Audiometry), Play Audiometry Conditioning</li><li>C) CHDP Screening Audiogram</li><li>D) Instrumentation Study, Instrument Measurement &amp; Critical Care equipment.</li></ul>

# 1<sup>st</sup> YEAR

## PAPER-I

### Basics of Anatomy & Physiology

#### **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 Subsatance

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

8. Collection of Specimens

**a. Blood:** Types of Spencimens, Collection, Precations during collection processing and preservation.

**b. Urine:** Types of Specimens, Collection, Precautions during collection, Processing and Preservation.

9. Urine biochemical parameters.

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,

Epitheleal cells,

casts,

crystals,

parasites.

Preparation of Reagents, procedure and principle of tests.

2. **Sputum Analysis** – Physical Examination,  
Preparation and staining smear for Microscopic Examination.
3. **Semen Analysis** – Physical Examination Microscopy – counting,  
motility,  
staining,  
Morphology,  
abnormal and normal forms.

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.
- b) Principle of Fluorescent microscope, Electron Microscope, Dark Ground Microscope.

#### **History**

**Types of Microscope:** (a) Light Microscope, (b) DGI, (c) Fluorescent, (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 Moist Heat-pasteurization, Inspissation, tyndalisation, autoclave.

2) Filtration Methods

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

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.

# Paper-III

## **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 scrubnurse
    - 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

# 2<sup>nd</sup> Year

## Paper-II

### PRACTICALS

1. Monitoring of vital signs, Spo<sub>2</sub>
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