**SYLLABUS FOR O.T TECHNICIAN**

**PAPER-1**

**OT-101**

**ANATOMY & PHYSIOLOGY:**

**Introduction: -**

Structure of the body-cells-tissues.

Muscular-Skeletal system: Skull control. 9. Demonstration. 10. Demonstration. 11. Demonstration.– verbal column girdle, Bones of upper extremities – Bones of lower extremities, muscles, pelvic girdle, thoracic cage & bone joints.

Cardiovascular system: Heart – Circulation of blood- arteries- veins. Lymphatic system: Circulation of Lymph, Lymph glands, and Thoracic duct.

Digestive system: Mouth, esophagus, stomach, small intestine, large intestine, spleen, liver, gall bladder, Pancreas. Respiratory system: Nose & Larynx-Trachea Bronchi Lungs.

Nervous system: Meanings- Brain-Ventricles-Spinal cord and nerves. Reproductive system: Female & Male organs.

Urinary system: Kidneys, Ureters, Bladder, Prostate, and Urethra. Skin: Structure and its function.

Endocrine system: Hypothalamus Pituitary gland, Penial Gland, Thymus gland, Thyroid and Para thyroid glands, Suprarenal Glands, Testes, Ovaries. Eye: Structure and its function. Ear: Structure and its function.

***PHYSIOLOGY*(Theory)**: ]

**1. Blood**:

(a) Composition and general functions of blood.

(b) Descriptions of blood cells normal count and functions.

(c) Steps of coagulation, Anti-coagulation.

(d) Cerebrospinal fluid, formation, composition and functions.

(e) Blood group, ABO and Rh, Basis for classification, Basis for determination, Importance of blood groups.

(f) Composition and functions of lymph.

2. Cardio-vascular system:

(a) Functions of Heart and blood vessels

(b) Descriptions of blood cells normal counts and functions.

(c) Steps of coagulation.

(d) Cerebrospinal fluid, formation, compositions and function.

(e) Blood group. Rh, Basic for classification, Basic for determination, Importance of blood groups.

(f) Composition and function of lymph.

**2. Cardio- vascular system:**(a) Functions of Heart and blood vessel. (b) Circulation Systemic circulation. Pulmonary circulation (c) Cardiac cycle brief description of events. (d) Definition of cardiac output, pulse, blood pressure. Electrocardiogram

**3.Respiratory system**

(a) Name the structures involved in respiration and their function

(b) Transport of O2and CO2 in the blood.

(c) Definitions of respiratory rats. tidal volume, vital capacity, cyanosis, hypoxia.

**4.EXCREATORY SYSTEM**:

(a) Functions of Kidney.

(b) Functions of glomerulii and tubules. Composition of urine normal and abnormal**.**

**5. SKIN:**

Function of skin.

**6.** **DIGESTIVE SYSTEM:**

(a) Composition and functions of saliva, Mastication and deglutition.

(b) functions of stomach, composition of gastric juice, pancreatic juice, Bile and succusentericus.

(c) Digestion of food by different enzymes. Absorption and defaecation.

**7.ENDOCRINE GLANDS:**

(a) Definition endocrine glands. Name the endocrine glands and the hormone secreted by them.

(b) Major actions of each hormone**.**

**8.REPRODUCTIVE SYSTEM:**

(a) Name the primary and accessory sex organs in male and female. Nthe secondary sexual characters in male and female.

(b) Functions of ovary formation of ova, actions of ovarian hormones.

(c) Function of testis spermatogenesis and actions testosterone.

**ANATOMY, PHYSIOLOGY**

**ANATOMY (PRACTICAL)**

1. Demonstration of parts of body landmarks on the surface.

2. Skeletal system, identification of bones and joints.

3.Demonstration of interior of thorax with organs in situ.

4. Respiratory system and pleurau.

5. heart and great vessels.

6. Demonstration and identification of various organs with the abdomen.

7. Liver and gall bladder.

8.Peritoneum ,stomach and Intestines.

9. Spleen, pancreas and part of Urinary system.

10. Male genital system.

11. female genital system.

12. Central nervous sytem, spinal level and site of lumber puncture.

13. Surface anatomy of important organs and blood vessels.

14. Demonstration of limbs with special referene to important vessel and muscles.

**PHYSIOLOGY (PRACTICAL)**

1.Microscope, Usage, Maintenance,Cleaning and minor repairs.

2. Behavior of RBC in Isotonic, Hypo tonic and Hypre-tonic, sodium chloride solution.

3. Identification of blood cells focussed under microscope.

(a) RBC

(b) Various types of WBC

(c)Platelets

(d)reticulocyte.

4.To obtain sample of plasma and serum.

5.Preparation of anti-coagulants,double oxalate and sodium citrate.

6. Haematocrit.

7.Identification of ruling area in neubauers chamber,RBC and WBC pipettes and westergreens pipette Wintrobes tube.

8. Haemogobin estimation.

9. Demonstration of blood pressure recording and pulse.

10. Demonstration of normal constituents of urine and abnormal constituents e.g. glucose protein etc.

**PAPER-2**

**Surgical instruments & General Surgery**

**OT- 102**

**SURGICAL INSTRUMENTS AND GENERAL SURGERY**

**(A)SURGICAL INSTRUMENTS:**

Instruments for General Surgery.

**SURGICAL PROCEDURES, MONITORING & PREPARING OF INSTRUMENT TRAYS**

Roll of OT Technician **,**Importance **,**Infection control**,** Chemical Hazards Pre & post operative procedures

-Preparation of instrument Trays

-General surgery Trays

-Major procedures Tray

-Basic/ minor Procedure Tray

-Long instrument Tray

-Choledochescopy Tray

-Basic Rigid Sigmoidscopy tray

-Gastrointestinal Procedures Tray

-Rectal Procedures Tray

**STERLISATION & O.T. APPARATUS**

**(B) OHER MACHINES COMMONLY USED IN O.T.:**Cautery, O.T Light, Suction, Cardiac Monitor, Emergency Light, Pulse Oxymeter etc.

**(C) DRUGS COMMONLY USED IN O.T.**

(a) Anesthetic medicines chloroform, Ether, Nitrous Oxide, halogen etc.

(b) General Medicines Analgesics, sedatives

(c) I.V. Fluids

(d) Antibiotics

(e) Emergency drugs

**(D) PRE- OPERATIVE CONSIDERATIONS:** Physiological support of the surgical patient.

**(E) PROTECTION OF THE PATIENT IN SURGERY:**

Admission procedure ,Transfer Procedure ,Various positions during operations

Lithotomy position, ante- tendenlenbreg's position, Kidney Position

Environmental Controls ,Electrical and Fire Hazards ,Electro- surgery

Operative Record ,Counting Procedure ,Sterilization ,Emergencies and Disasters

**SURGICAL PROCEDURES & SPECIALITY OPERATIVE SURGERY**

**1. Gynecologic and Obstetric Trays:**

Dilatation and Curettage (D&C) Tray, Cervical Cone Tray, Vaginal Hysterectomy Tray,

Laparoscopy Tray, Abdominal Hysterectomy Tray, Cesarean Section Tray.

**2. Genitourinary Trays:**

Vasectomy Tray, Open ,Prostatectomy Tray, Kidney , Operation Tray.

**3. Thoracic Trays:**

Mediastinoscopy Tray,Thoracotomy Tray,Pacemaker Tray.

**4.Cardiovascular Trays:**

Vascular procedures Tray,Vascular Shunt Tray,Cardiac Procedure Tray.

**5. Orthopedic Tray:**

Basic orthopadic procedures Tray,Minor orthopedic procedures Tray,Bone Holding Instruments Tray,Hip Retractors Tray.

**6.Neurologic Procedures Trays:**

Craniotomy tray**,** Laminectomy Tray, Kerrission Rongenurs and Pituitary Tray,

**7. Plastic Procedures Tray:**

Basic Plastic procedures Tray.

**8. Otorhinolaryngologic (ENT) Tray;**

Basic Ear Procedures Tray,Nasal procedures Tray,Myringotomy Tary,Tonsillectomy and Adenoidectomy Tray,Tracheostomy Tray.

**9. Ophtalmic Tray:**

Basic Eye Procedures Tray, Eylied and Conjunctival Procedures Tray, Basic Eye Muscle Procedures Tray, Globe and Orbit procedures tray, Corneal procedures Tray, Cataract Extraction and Lens Procedures Tray, Basic Eye procedures Tray, Glaucoma procedures Tray, Retinal Procedures tray.

**10. Pediatric trays:**

Pediatric Major Procedures Tray, Pediatric Minor procedures Tray, Pediatric Gastrointestinal Procedures tray. Repair of Syndactyly Skin grating Scar release operation Digital flexor Tendon Repair , Peripheral Nerve Repair ,augmentation Mamoplasty, Abdominopasty/ abdominal, Liposuction

**Surgery :**

**1.** **Gynecologic and Obstetric Surgery:**

-Dilatation of the Cervix and Curettage of the Uterus (D & C), Therapeutic Abortion by Suction Curettage,Vaginal Hysterectomy, Anterior and/ or posterior colorrhaphy Laparoscopy/ Hysterectomy, Total Abdominal Hysterectomy, Salpingo- opherectomy, Tubal Sterilization Tuboplasty of the Fallopian Tubes, Cesarese Section.

**2.** **Genitourinary Surgery:**

Hypospadius Repair, Epispadius Repair , Hydro colectomy , Spermatocolectomy, Orchectomy, Cystoscopy, Cystostomy, Cystectomy, Teansurethral Resection of the prostate (TURB)and/ or Lesions of the Bladder Neck (TURB), Open Prostatectomy, Nephrectomy, Upper tract Urolithototmy ( Ureterlithotomy, Pyeloit hotomy) , Nephrolithotomy, Cutaneous Ureterostomy, Lieal conduct, Adrenalectomy, Extracorporeal Shock Wave Lithotripsy (ESWL), Ultrasonic Lithotripsy, Electrohydrulic Lithoripsy,

**3. Thoracic Procedures:**Bronchoscopy, Mediastinoscoy, Segmental Resection of the Lung, Wedge Resection of the lung, Pulmonary Lobectomy, Pneumonectomy,Decortication of the Lung,Insertion of Transvenous Endocardial Pacemaker

**4. Cardiovascular Surgery:**

Carotid Endarterectomy , Abdominal Aorotic Procedures (Abdominal Aortic), Aneurysmectomy, Abdominal Aoristic Endarterectomy), Femoropopliteal Bypass, Greater Saphenous Vein Legation and Stripping,

**5.(E.N.T) Surgery**:

Aetiology , sysptomatology and treatment of following conditions -sinusitis , rhinitis Acute and Chronic Otitis ,Otosclerosis ,Mastoldectomy,Tympanoplasty ,Stapdectomy Submucous resection of the Nasal Septum (SMR) ,Intranasal Arthroscopy Intranasal Fenestration of the Nasoantral wall ,Caldwell –luc Procedure (Radial Drainage of the anttrum of the Maxillar Sinuses) ,Nasal Polypectomy ,Drainage of the frontal sinus , Tonisllectomy and Adenoidectomy (T and T) , Laryngostomy ,Radical Neck Dissection,Excision of the lesion of the oral cavity (Practical Glossectomy with Marginal Resection of the Mandible ),Excision of a chalazation ,Canthotomy ,Correction of Ectropion, Blepharoptosis Repair, Lacrimal Duct Probing ,Decryocystorrhinostomy, Indectomy, Trabeculectomy, Excision of a Pterygium, Repair of Retinal Detachment / Scieral Buckling,Vitrectomy Refactive Keratoplasty,Trabeculectomy, Corneal Transplant / Keratoplasty,Cataract Extraction

**6. Pediatric Procedures:**

Pediatric General Information,Pediatric Tracheostomy, Branchial CLEFT Sinusectomy, Repair of Congenital Diaphragmatic Hernia, Omphalocels Repair, Porto systemic Shunt, Arterio-venous Shunt, Arterio venous Fistula, Cardiac procedures; Closed heart Surgery, open heart Surgery

**7.Orthpadedic Surgery**

Open Reduction of a carpal Bone Fracture, Excision of a Ganglion, Carpal Tunnel Release, Open Reduction of the Humerus, Open Reduction of the Radius and/ or Ulna, Open Reduction of the olecranon process Fracture Repair of Recurrent Anterior Dislocation of the Shoulder, Open Reduction of Fracture of the Humeral Head ( including Humeral Head prosthesis) Internal Fixation of the Hip, Femoral Head Prosthetic Replacement, Total Hip Replacement, Open Reduction of the Femoral shaft, Triple Arthrodesis of the Ankle, Total Ankle joint Replacement, Open reduction of the Ankle,Arthrotomy of the Knee, Excision of popliteal ( Baker's) Cyst,Total Knee replacement-open Reduction or the Tibal shaft,Correction of Hammer Toe deformity with Interphalangeal, Fusion, Metatarsal Head Resection, Procedures for correction of Scoliosis, Amputation of Lower Extremity

**8. Neurological Surgery:**

Craniotomy, Cranioplasty, Transphenodial Hypophysectomy, Ventricular Shunts, Laminectomy, Excision of a Cervical Intervertebral Disc with Fusion, Anterior Approach

**9. Plastic Surgery:**

Cleft Lip Repair ,Cleft Palate Repair, Reduction of Nasal Fracture, Reduction of a Mandibular Fracture, Reduction of a Zygomatic Fracture, Open Reduction of an Orbital Floor Fracture,Rhinoplasty – Mentoplaste Augmentation, Blepharoplasty ,Rhytidectomy, Dermabrasion, Otoplasty, T.O.Fidtila, Pediatric Umbilical Hernoiorrhapy,Repair of Congenital Atresia of the Esophagus,Insertion of a central Venous Cathetar (Pediatric), Pyioromyotomy for Congenital Hypretrophic pyloric Stenosis,Pediatric Gastrostomy,Relief of Intestinal Obstruction (Pediatric),Redcution of Pediatric Intussusception,Pediatric Colostomy – Pediatric Colorectal Resection for Aganglionic Megacalon/ Hirschsprung's Diseaes,Repair of Imprforate Anus,Neural Tube Defects Meningomyelocele .

**ANAESTHESIA**

**-ANAESTHESIS:**Including different methods and procedures for Anesthesia; Preparation of patient for anesthesia; Intensive care etc.

**1.**Anesthesia:

General Information– General Anesthesia, Conduction Anesthesia, Boyle's apparatus-it –use Oxygen –Nitrous Oxide

**2.** General Anesthesia

**3.**Conduction Anesthesia –Spinal, Epidural, Caudal-Regional, Local – Topical

**4.**Methods for Preparation of the patients for Anesthesia

**5.**Intensive care – Methods and procedures (during and after operation)