PHOENIX PARA MEDICAL COLLEGE PULWAMA KMR.

SYLLABUS & SCHEME OF EXAMINATION

COURSE : Operation Theatre Assistant /Technology (OTT-2ND YEAR)

PAPER	COURSE ASSESSMENT	EXTERNAL ASSESSMENT	INTERNAL
THEORY (PAPER - A)	Surgical Procedures –Part 2nd	100	NA
THEORY (PAPER –B)	Anaesthesia , Surgical Trays	100	NA
PRACTICAL	Paper A & Paper B	125	25
	Total	350	

Paper : A Surgical Procedures

1. Plastic Surgery :
   - ❖ Cleft Lip repair
   - ❖ Clift palate repair
   - ❖ Reduction of Nasal Fracture
   - ❖ Reduction of Mandibular fracture
   - ❖ Reduction of Zygomatic Fracture
   - ❖ Open Reduction of an Orbital Floor Fracture
   - ❖ Rhinoplasty
   - ❖ Mentoplasty Augmentation
   - ❖ Blepharoplasty
   - ❖ Dermabrasion
   - ❖ Otoplastu
   - ❖ Repair of syndactyly
   - ❖ Digital Flexor tendon repair
   - ❖ Peripheral Nerve Repair
   - ❖ Palmar Fasciotomy
   - ❖ Reduction Mammoplasty
   - ❖ Augmentation Mammoplasty
   - ❖ Abdominoplasty / Abdominal Liposuction
   - ❖ Liposuction
2. *Otorhinolaryngology* (ENT) Surgery :
   - ❖ Myringotomy
   - ❖ Mastoidectomy
   - ❖ Tympanoplastu

- Stapedectomy
- Submucous Resection of the Nasal Septum (SMR) / Septoplasty
- Untranasal Antrostommy / Intranasal Fenestration of the Nasoantral wall
- Cald – well – Lue procedure (radial drainage of theantrum of the maxillary sinuses)
- Nasal polypectomy
- Drainage of the Frontal sinus
- Tonsillectomy & Adenoidectomy (T and A)
- Laryngoscope
- Tracheostomy
- Excision of lesions of the Oral cavity (partial Glossectomy with Marginal Resection of the mandible)

3. Ophthalmic Surgery :
   - General Information
   - Excision of a chalazion
   - Canthotomy
   - Correction of Ectropion
   - Blepharoptosis (repair
   - Lacrimal Duct probing
   - Dacyocystorhinostomy
   - Correction of Strabismus
   - Esyisceration of the globe
   - Enu leation of the globe
   - Orbital Exenteration
   - Corneal Transplant / keratoplasty
   - Cataract Extraction
   - Iridectomy
   - Trabeculectomy
   - Excision of a Pterygium
   - Repair of Retinal Detachment / Scieral Buckling
   - Vitrectomy
   - Refractive Keratoplasty
4. Pediatric procedures :
   - Pediatric general information
   - Pediatric Tracheostomy
   - Branchial Sinusectomy
   - Repair of congenital Diaphragmatic Hernia
   - Omphaloocele Repair
   - Pediatric umbilical Herniography
   - Repair of Congenital Atresia of the Esophagus
   - Insertion of a central Venous Catheter (Pediatric)
   - Ploromyotomy for congenital Hypertrophic Pyloric Stenosis
   - Pediatric Gastrostomy
   - Relief of Intestinal Obstruction (Pediatric)

- ❖ Reduction of Pediatric Intussusceptions
- ❖ Pediatric Colostomy
- ❖ Pediatric Colorectal Resection for Aganglionic Megacalon / Hirschsprung's Disesase.
- ❖ Repair of Imperforated Anus

PAPER : B (Anaesthesia , Surgical Trays)

RESPIRATORY SYSTEM

A. Structure and function of the respiratory tract in relation to respiratory system

Nose - Role in humidification

Pharynx - Obstruction in airways

Larynx - Movement or vocal cords, Cord palsies.

Trachea & Bronchial tree - vessels, nerve supply, respiratory tract,

reflexes, bronchospasm

Alveoli - Layers, Surfactants

B. Respiratory Physiology

• Control or breathing

• Respiratory muscles - diaphragm, intercostals

• Lung volumes - dead space, vital capacity, FRC etc.

• Pleural cavity - intrapleural pressure, pneumothorax.

• Work of breathing - airway resistance, compliance

• Respiratory movements under anaesthesia.

• Tracheal tug - signs, hiccup

C. Pulmonary Gas Exchange And Acid Base Status

• Pulmonary circulation - Pulmonary oedema,

- pulmonary hypertension
- Pulmonary function tests.
- Transfer of gases - oxygen & Carbondioxide
- Acid base status, definitions, acidosis types, Alkalosis types, buffers in the body.

D. Oxygen: properties, storage, supply, hypoxia

E. Respiratory failure, type, clinical features, causes.

II. CARDIOVASCULAR SYSTEM

Anatomy - Chambers of the heart, major vasculature. Coronary supply, innervation. Conduction system.

Cardiac output - determinants, heart rate, preload, after load.

Coronary blood flow& myocardial oxygen supply

ECG - arrhythmias cardiovascular response to anesthetic & surgical procedures.

Hypotension - causes, errects, management.

Cardio pulmonary resuscitation.

Myocardial infarction, hypertension.

III. FLUIDS AND ELECTROLYTES

• Body Fluids - Composition

• Water, sodium and potassium balance

• I.V. Fluids - composition & administration

• I.V. Cannulation.

IV. BLOOD TRANSFUSION

Blood grouping, storage, administration

Pharmacology (Clinical /Composition / Uses /Routes of administration of drugs)

ANTISIALAGOGUES

Atropine, Glycophyrrolate

SEDATIVES I ANXIOLYTICS

Diazepam, Midazolam, Phenergan, Lorazepam, Chloropromazine,Trichlophos

NARCOTICS

Morphine, Pethidine, Fentanyl, Pentazozine

ANTIEMETICS

Metoclopramide , Ondansetron , Dexamethasone

INDUCTION AGENT

Thiopentone , Diazepam, Midazolam, Ketamine, Propofol , Etomidate.

MUSCLE RELAXANTS

Depolarizing - Suxamethonium,

Non depolarizing –Pancuronium , Vecuronium , Atracurium , rocuranium

INHALATIONAL GASES

Gases - 02, N20, Air

Agents - Ether-, Halothane, Isoflurane, Sevoflurane, Desflurane

REVERSAL AGENTS

Neostigmine, Glysopyrrolate, Atropine,

Nalorphine, Naloxone, Flumazenil (Diazepam)

LOCAL ANAESTHETICS

Xylocaine, Preparation, Local – Bupivacaine - Topical,

Prilocaine-jelly, Emla - Ointment, Etidocaine. Ropivacaine

EMERGENCY DRUGS

• Adrenaline : Mode or administration, dilution, dosage,

• effects, Isoprenaline

• Atropine, bicarbonate, calcium, ephedrine, xylocard,

• Inotropes : dopamine, dobutamine, amidaron

• Aminophylline, hydrocortisone, antihistaminic, potassium.

• Cardiovascular drugs

• Antihypertensive

• Antiarrhythmic

• Beta - Blockers

• Ca - Channel blockers.

• Vasodilators - nitroglycerin & sodium nitroprusside

• Respiratory system - Bronchodilators, respiratory stimulants o Bronchiolytic agents

• Renal system - Diuretics ,furosemide, mannitol

GENERAL CONCEPTS OF ANESTHESIA :

1. PRINCIPLES OF ANAESTHESIA

A. MEDICAL GAS SUPPLY

• Compressed gas cylinders • Colour coding • Cylinder valves; pin index. • Gas piping system • Recommendations for piping system • Alarms & safety devices.

B. ANAESTHESIA MACHINE

Hanger and yoke system • Cylinder pressure gauge • Pressure regulator • Flow meter assembly • Vaporizers - types, hazards, maintenance, filling and draining, etc.

C. BREATHING SYSTEM

• General considerations: humidity & heat

• Common components - connectors, adaptors, reservoir bags. • Capnography ; etc02 • Pulse oximetry • Methods of humidification. • Classification of breathing system • Mapleson system - a b c d e f

• Jackson Rees system, Bain circuit • Non rebreathing valves - ambu valves • The circle system

• Components • Soda lime, indicators

D. FACE MASKS & AIRWAY LARYNGOSCOPES

• Types, sizes • Endotracheal tubes - Types, sizes. • Cuff system • Fixing, removing and inflating cuff, checking tube position complications.

E. ANAESTHESIA VENTILATOR AND WORKING PRINCIPLES.

F. MONITORING

• ECG • Sp02 • Temperature • IBP • CVP • PA Pressure • LA Pressure

2. BASIC ANAESTHETIC TECHNIQUES

HISTORY OF ANAESTHESIA

• First successful clinical demonstration: • Pre - historic (ether) era • Inhalational anesthetic era • Regional anesthetic era • Intravenous anesthetic era • Modem anesthetic era • Minimum standard of anesthesia • Who should give anesthesia

PRE-OP PREPARATION:

Pre anesthetic assessment~ History – , past history - disease / Surgery / and personal history - Smoking / alcohol General physical assessment, systemic examination – CVS, RS, CNS

INVESTIGATIONS

Routine - Hematological - their significance - Urine - E.C.G. - Chest X - ray

Special -Endocrine, hormonal assays - Echocardiography - Angiography - Liver function test - Renal function test - Others

Case acceptance: ASA grading - I, II, III, IV. V

PRE - ANAESTHETIC ORDERS:

Patient - Informed consent - Npo - Premedication - advantages, drugs used - Special instructions - if any Machine - Checking the machine 02, N20, suction apparatus Laryngoscope, et tubes, airways - Things for IV accessibility - Other monitoring systems Drugs - Emergency drugs - Anesthetic drugs

Preparation of patient for anesthesia , intensive care etc.

INTRAOPERATIVE MANAGEMENT

• Confirm the identification of the patient • Monitoring - minimum • Noninvasive & Invasive monitoring • Induction - drugs used • Endotracheal intubation • Maintenance of anesthesia • Positioning of the patient

• Blood / fluid & electrolyte balance • Reversal from anesthesia - drugs used

• Transferring the patient • Recovery room – set up and things needed

POST OPERATIVE COMPLICATIONS & MANAGEMENT

6. Regional Anesthetic techniques.

a. Local anesthetic technique

b. Nerve blocks

c. Spinal Anaesthesia

e. Epidural anaesthesia

3. Conducting Anaesthesia
   - ❖ Spinal
   - ❖ Epidural
   - ❖ Caudal
   - ❖ Regional
   - ❖ Local
   - ❖ Topical
4. Methods for preparation of the patients for Anaesthesia:
   - ❖ Methods and procedures (during and after operation)
   - ❖ Sterilization , Disinfection and waste Disposal .
   - ❖ Sterilization of equipment and instruments ,CSSD
   - ❖ OT STERILIZATION
   - ❖ Prevention and transmission and care of immune compromised disposal.
   - ❖ Surgical procedures and monitoring
   - ❖ Operation theatre ethics /discipline
   - ❖ Safety for operating room personnel : in service education ,body mechanic , fatigue safety , radiation safety , infection control , chemical hazards.
   - ❖ Preparation of instrument trays , national health programmes and policy and health care delivery system in the country etc.
5. Preparation of instrumental trays :
   A. Common procedures trays
      - ❖ Major procedures tray
      - ❖ Basic / Minor procedures tray
      - ❖ Limited procedures tray

- Thyroid tray
- Long instruments tray
- Biliary tract procedures tray
- Choledochoscopy tray
- Basic rigid sigmoidoscopy tray
- Gastrointestinal procedures tray
- Rectal procedures tray

B. GYNAECOLOGICAL & OBSTETRIC TRAYS:
- Dilation of cervix & curettage of the uterus (D&C) tray
- Cervical cone tray
- Laproscopy tray
- Abdominal hysterectomy tray
- Caesarian section tray
- Vaginal hysterectomy tray

C. GENITOURINARY TRAYS :
- Vasectomy tray
- Open prostatectomy tray
- Kidney tray

D. THORACIC TRAYS :
- Mediastinoscopy tray
- Thoractomy tray
- Pacemaker tray

E. CARDIO – VASCULAR TRAYS :
- Vascular procedure tray
- Vascular shunt tray
- Cardiac procedure tray

F. ORTHOPAEDIC TRAYS :
- Basic orthopaedic procedures tray
- Minor orthopaedic procedures tray
- Hip replacement tray
- Knee or ankle arthroscopy tray

G. NEUROLOGIC PROCEDURES TRAYS :
- Craniotomy tray
- Lamineotomy tray
- Kerrison Rongeurs and Pituitary corceps tray.

H. OTORHINOLARYNNNGOLOGIC (ENT) TRAYS :
- Basic ear procedures tray
- Nasal procedures tray
- Myringotomy tray
- Tonsillectomy & adenoidectomy tray
- Tracheostomy tray
- Antral puncture tray

I. OPTHALMIC TRAYS:

- Basic eye procedures tray
- Eyelid & conjunctional procedures tray
- Basic eye muscle procedures tray
- Dacrystorhinostomy tray
- Corneal procedures tray
- Cataract extraction & lens procedures tray
- Glaucoma procedure tray
- Basic eye procedures microscope tray
- Retinal procedures tray

J. PEDIATRIC TRAY

- Pediatric major procedures tray
- Pediatric minor procedures tray
- Pediatric gastro intestinal procedures tray. (with special emphasis on National Health Programmes & Policies including Health Care Delivery System of India.)