

## **ANESTHESIOLOGY SYLLABUS FOR PhD**

### **Section 1: Basic science**

**Marks-10**

- a. Anatomy related to cardiovascular system, respiratory system, central nervous system, sympathetic and parasympathetic nervous system, regional anatomy.
- b. Physiology related to cardiovascular system respiratory system, central nervous system, nervous system, neuromuscular junction.
- c. Biochemistry related to fluid therapy, various function tested related to system e.g. LFT, KFT and basics of measurement techniques to evaluate the function status of organ system and Concept of cytokines and other enzymes.
- d. Pharmacology related to general principles concept of pharmacokinetics and pharmacodynamics of intravenous, inhalational, neuromuscular blocking drugs and local anesthetics, Drugs interaction in anesthesiology.
- e. Physics related to anesthesia machine and equipment.
- f. History related to anesthesia.
- g. Basic research methodology and clinical trials.
- h. Medical education including evidence based education.
- i. Hazards and safety in anesthesia.
- j. Perioperative monitoring.

### **Section 2: Anesthesia in relation to associated systemic and medical education.**

**Marks-10**

- a. Basic & Advance Resuscitation.
- b. Theoretical background of the commonly used anesthesia techniques, such as general anesthesia, regional anesthesia, spinal, epidural.
- c. Complication of anesthesia procedures.
- d. Airway management and difficult intubation
- e. Perioperative anesthesia management including pre-operative evaluation, as well as postoperative management.
- f. Theory and practice of various anesthesia techniques and postures required for anesthesia/surgical procedures of Routine & Emergency cases
- g. Anesthesia for pediatric patients.

- h. Anesthesia for geriatric patients.
- i. Anesthesia for obstetric patients.
- j. Immune response and anesthesia.
- k. Special anesthesia techniques as relevant to Outpatient anesthesia, Remote Location Anesthesia.
- l. Anesthesia practice during disasters and for large turnover surgeries in camps/mass casualties.

### **Section 3: Anesthesia in relation to subspecialties**

**Marks-10**

- a. Anesthesia for obstetric & gynecological surgeries.
- b. Anesthesia related to dental and oro-maxillofacial surgeries.
- c. Anesthesia related to otolaryngology surgeries.
- d. Endoscopies / laparoscopies Anesthesia management
- e. Anesthesia for Laser Surgery.
- f. Anesthesia for various diagnostic, therapeutic and specialized procedures like, Electroconvulsive shock therapy (ECT) Electrophysiology tests; Special anesthesia consideration in radiology and interventional radiology related to Dye allergies, Embolization, monitoring / Equipment option in the MRI suite.
- g. Anesthesia for Robotic Surgery.

### **Section 4: Anesthesia related to Super –specialties**

**Marks-10**

- a. Anesthesia management of Cardio Vascular & Thoracic Conduct of closed heart as well open-heart surgeries (Valvular, Ischemic, Congenital- Cyanotic & A cyanotic), CABG (including off pump).
- b. Management of head injuries, bleeds, tumors with raised ICT and management for case in sitting, prone, lateral, jack-knife positions and anesthesia management for neuroradiology procedures.
- c. Urology Management of endoscopic surgeries like TURP/TURBT, Problem related to TURP, extracorporeal shock wave lithotripsy, patients with acute and chronic renal failure.
- d. Plastic Management of burns contractures, congenital faciomaxillary abnormalities like cleft lip and plated faciomaxillary injuries like fracture

mandible, maxilla, zygoma, panfacial fractures, microvascular surgeries, reconstructive surgeries, anesthetic surgeries.

- e. Anesthesia in relation to transplant surgery.
- f. Anesthesia for oncosurgery.

## **Section 5: Intensive Care and Pain Medicine**

**Marks-10**

- a. Recognition of critical illness.
- b. Recognition of life threatening change in physiological parameters.
- c. Hemodynamic monitoring with arterial, central venous and pulmonary artery catheters.
- d. Principal and application of Oxygen therapy.
- e. Treatment algorithms for common medical emergencies.
- f. Interpretation of ECG, ABG, chest radiograph CT scan and other common radiology imaging modalities.
- g. Understanding of the operation of mechanical ventilator,
- h. Introduction to pain (anatomy and physiology), types and classification.
- i. Various Pain scales and scores.
- j. Pharmacology and route of administration of various drug management of pain.
- k. Palliative Care, Rehabilitation, end life issues, Hospices management & do not resuscitate order.

\*\*\*\*\*