

Syllabus for the preliminary test for the recruitment on the post of

Anaesthetist, Class I under Employees State Insurance Scheme

Marks – 200

Questions - 200

Medium - English

(Advt. No. 113/2020-21)

1. Anatomy related to:

- Diaphragm, upper and lower airway.
- Regional anaesthesia, field block, central neuraxial, blockade, block for acute painstates.
- Intramuscular injections, arterial and venous cannulations and positioning.

2. Physics related to:

- Anaesthesia machine - assembly of necessary items.
- Airway equipment including laryngoscopes, airway devices.
- Breathing systems.
- Monitoring in anaesthesia with concepts of minimum monitoring
- Gas laws, medical gas supply system
- Fluidics
- Electricity and diathermy
- Oxygen therapy
- Theories of anaesthesia
- Respiratory, cardiovascular, hepatobiliary, renal and endocrine system, pregnancy, blood, muscle and N-M junction, Nerve impulse transmission, ECG, regulation of temperature and metabolism, stress response, cerebral blood flow and ICP.
- Central, autonomic and peripheral nervous systems.
- Metabolic response to stress and trauma equipment's used in anaesthesia monitors, ventilators, vaporizers, fibroptics Laser, Pacemaker and defibrillator, Monitoring equipment used for assessment of cardiac functions, temperature, respiratory functions,

blood gases, intracranial pressure, depth of anaesthesia and neuromuscular block.

- Sterilization of equipment
- Computers in anaesthesia
- Pharmacology of drugs used in cardiovascular, respiratory, endocrine, renal diseases and CNS disorders.
- Interpretation of blood gases and other relevant biochemical values, various function tests and basics of measurement techniques, ECG.
- Blood coagulation mechanism, disturbances, and blood components.
- Special anaesthetic techniques as relevant to: Outpatient anaesthesia, hypotensive anaesthesia, anaesthesia in abnormal environments including rural area and calamitous situations
- Associated medical disorders in surgical patients
- Geriatric and paediatric anaesthesia
- Emergency, ENT, orthopaedic, ophthalmology, obstetrics, dental, radio-diagnosis and radiotherapy.
- Medical statistics relevant to data collection, analysis, record keeping in anaesthesia, comparison and estimation of significance.
- Care of terminally ill, Hospices management. Do not resuscitate orders.
- Postures and anaesthesia.
- Induced hypothermia, incidental, and environmental safety of patient.
- Malignant hyperthermia, myasthenia gravis, GB syndrome and other neuromuscular diseases, obesity, COPD, Diabetes mellitus, bronchial asthma and hypertensive crises
- Third world anaesthesia.
- Inherited metabolic diseases and anaesthesia.
- Anaesthesia for patients with severe cardiac, respiratory, renal and hepatobiliary disorder posted for unrelated surgery Shock, types, pathogenesis and management of patients in shock, renal failure, critically ill and/or on ventilator, multiple organ failure, Infection control, cross contamination in OT and ICU.

- Selection, maintenance and sterilization of anaesthesia and related equipment
- Chronic pain therapy and therapeutic nerve blocks.
- Acupuncture, acupressure and other non-conventional methods of treatment.
- Principles of neonatal resuscitation, ventilation and critical care.
- Principles of human resources and material management.
- General principles of medical audit. Critical incident reporting
- Ethics and clinical trial.
- Hospital, ICU and OT design and planning.
- Medical education including evidence based medical education.
- Anaesthesia machine - assembly of necessary items.
- Airway equipment including laryngoscopes, airway devices
- Breathing systems
- Monitoring in anaesthesia with concepts of minimum monitoring
- Gas laws, medical gas supply system
- Fluidics
- Electricity and diathermy
- Oxygen therapy
- Theories of anaesthesia
- Respiratory, cardiovascular, hepatobiliary, renal and endocrine system, pregnancy, blood, muscle and N-M junction, Nerve impulse transmission, ECG, regulation of temperature and metabolism, stress response, cerebral, blood flow and ICP. Central, autonomic and peripheral nervous systems.
- Metabolic response to stress and trauma.
- Principles of anaesthetic management of neuro/ cardiac/ thoracic/ vascular/ transplantation/ burns and plastic surgery.
- Multiple organ failure
- Infection control, cross contamination in OT and ICU.
- Immune response and anaesthesia.
- Concept of cytokines, and other enzymes.

3. **Pharmacology related to**

- General principles, concepts of pharmacokinetics and pharmacodynamics
- Drug interactions in anaesthesiology, anaphylactic reactions
- Drugs used for premedication, induction of anaesthesia, general anaesthetics-intravenous and inhalational, neuromuscular block and reversal of muscle relaxants.

4. **Biochemistry**

- Related to fluid balance and blood transfusion, perioperative fluid therapy, acid base homeostasis in health and diseases.
- Theoretical background of the commonly used anaesthetic techniques of general and regional anaesthesia, general principles of pre-aesthetic assessment and medication, recovery from anaesthesia and post-operative care, effects of positioning during anaesthesia.
- Introduction to the operation theatre, post-anaesthesia care rooms
- Introduction to acute, chronic pain and pain management.
- Documentation and medico-legal aspects of anaesthesia.
- Defensive anaesthesia.
- Concept of informed consent.
- Resuscitation - basic and advanced life support (cardiac and trauma life support), neonatal
- Intensive care of critical patients with introduction to artificial ventilation, management of unconscious patients, oxygen therapy, shock - pathophysiology and management.
- Introduction to Research methodology basics of biostatistics.

5. **Current Trends and Recent Advancements in Anaesthesiology.**