

Syllabus for the post of

Associate Professor, Emergency Medicine, Class-I (Advt. No. 31/2023-24)

Marks – 200

Questions – 200

Medium - English

A. SYSTEM BASED CORE KNOWLEDGE

1. CARDIOVASCULAR EMERGENCIES IN ADULTS AND CHILDREN:

Arrhythmias, Congenital heart disorders; Contractility disorders, pump failure; cardiomyopathies, congestive heart failure, acute pulmonary oedema; tamponade, valvular emergencies; Inflammatory and infectious cardiac disorders; endocarditis, myocarditis, pericarditis; Ischaemic heart disease; acute coronary syndromes, stable angina; Traumatic injuries, Vascular and thromboembolic disorders; aortic dissection/aneurysm rupture, deep vein thrombosis, hypertensive; emergencies, occlusive arterial disease, thrombophlebitis, pulmonary; embolism, pulmonary hypertension

2. DERMATOLOGICAL EMERGENCIES IN ADULTS AND CHILDREN:

Inflammatory and Infectious disorders; Skin manifestations of immunological disorders, systemic disorders, toxic disorders

3. ENDOCRINE AND METABOLIC EMERGENCIES IN ADULTS AND CHILDREN:

Acute presentation of inborn errors of metabolism, Adrenal insufficiency and crisis, Disorders of glucose metabolism hyperosmolar hyperglycaemic state, hypoglycaemia, ketoacidosis; Thyroid disease emergencies hyperthyroidism, hypothyroidism, myxoedema coma, thyroid storm.

4. FLUID AND ELECTROLYTE DISTURBANCES:

Acid-Base disorders, Electrolyte disorders, Volume status and fluid balance

5. EAR, NOSE, THROAT, ORAL AND NECK EMERGENCIES IN ADULTS AND CHILDREN:

Bleeding, Complications of tumours, airway obstruction; Foreign bodies, Inflammatory and Infectious disorders angio-oedema, epiglottitis, laryngitis, paratonsillar abscess; Traumatic problems

6. GASTROINTESTINAL EMERGENCIES IN ADULTS AND CHILDREN:

Congenital disorders Hirschsprung's disease, Meckel's diverticulum, pyloric stenosis; Inflammatory and infectious disorders appendicitis, cholecystitis, cholangitis, diverticulitis, exacerbations and complications of inflammatory bowel diseases, gastritis, gastroenteritis, gastro-oesophageal reflux disease, hepatitis, pancreatitis, peptic ulcer, peritonitis; Metabolic disorders hepatic disorders, hepatic failure; Traumatic and mechanical problems foreign bodies, hernia strangulation, intestinal obstruction and occlusion; Tumours; Vascular disorders/Ischaemia and bleeding: ischaemic colitis, upper and lower gastrointestinal bleeding, mesenteric ischaemia; Other problems complications of gastrointestinal devices and surgical procedures

7. GYNAECOLOGICAL AND OBSTETRIC EMERGENCIES:

Inflammatory and Infectious disorders mastitis, pelvic inflammatory disease, vulvovaginitis; Obstetric emergencies, abruptio placentae, eclampsia, ectopic pregnancy, emergency delivery; HELLP syndrome during pregnancy, hyperemesis gravidarum, placenta praevia, post-partum haemorrhage; Traumatic and related problems ovarian torsion; Tumours; Vascular disorders/ Ischaemia and bleeding: vaginal bleeding

8. HAEMATOLOGY AND ONCOLOGY EMERGENCIES IN ADULTS AND CHILDREN:

Anaemias, Complications of lymphomas and leukaemias, Congenital disorders haemophilias and Von Willebrand's disease, hereditary haemolytic anaemias, sickle cell disease; Inflammatory and Infectious disorders neutropenic fever, infections in immuno-compromised patients; Vascular disorders/ Ischaemia and bleeding: acquired bleeding disorders (coagulation factor deficiency, disseminated intravascular coagulation), drug induced bleeding (anticoagulants, antiplatelet agents, fibrinolytics), idiopathic thrombocytopenic purpura, thrombotic thrombocytopenic purpura; Transfusion reactions

9. IMMUNOLOGICAL EMERGENCIES IN ADULTS AND CHILDREN:

Allergies and anaphylactic reactions, Inflammatory and Infectious disorders, Acute complications of vasculitis.

10. INFECTIOUS DISEASES AND SEPSIS IN ADULTS AND CHILDREN:

Common viral and bacterial infections, Food and water-borne infectious diseases, HIV infection and AIDS, Common tropical diseases, Parasitosis, Rabies, Sepsis and septic shock, Sexually transmitted diseases, Streptococcal toxic shock syndrome, Tetanus.

11. MUSCULO-SKELETAL EMERGENCIES:

Congenital disorders dislocated hip, osteogenesis imperfecta; Inflammatory and Infectious disorders arthritis, bursitis, cellulitis, complications of systemic rheumatic diseases, necrotising fasciitis, osteomyelitis, polymyalgia rheumatica, soft tissue infections; Metabolic disorders complications of osteoporosis and other systemic diseases; Traumatic and degenerative disorders back disorders, common fractures and dislocations, compartment syndromes, crush syndrome, osteoarthritis, rhabdomyolysis, soft tissue trauma; Tumours: pathological fractures

12. NEUROLOGICAL EMERGENCIES IN ADULTS AND CHILDREN:

Inflammatory and Infectious disorders brain abscess, encephalitis, febrile seizures in children, Guillain-Barré syndrome, meningitis, peripheral facial palsy (Bell's palsy), temporal arteritis; Traumatic and related problems complications of CNS devices, spinal cord syndromes, peripheral nerve trauma and entrapment, traumatic brain injury; Tumours common presentations and acute complications of neurological and metastatic tumours; Vascular disorders: carotid artery dissection, stroke, subarachnoid haemorrhage, subdural and extradural haematomata, transient ischaemic attack, venous sinus thrombosis; Other problems acute complications of chronic neurological conditions (e.g. myasthenic crisis, multiple sclerosis), acute peripheral neuropathies, seizures and status epilepticus.

13. OPHTHALMIC EMERGENCIES IN ADULTS AND CHILDREN:

Inflammatory and Infectious disorders conjunctivitis, dacryocystitis, endophthalmitis, iritis, keratitis, orbital and periorbital cellulitis, uveitis; Traumatic and related problems foreign body in the eye, ocular injuries; Vascular disorders: retinal artery and vein occlusion, vitreous haemorrhage; Others like acute glaucoma, retinal detachment

14. PULMONARY EMERGENCIES IN ADULTS AND CHILDREN:

Congenital cystic fibrosis, Inflammatory and Infectious disorders asthma, bronchitis, bronchiolitis, pneumonia, empyema, COPD exacerbation, lung abscess, pleurisy and pleural effusion, pulmonary fibrosis, tuberculosis; Traumatic and related

problems foreign body inhalation, haemothorax, tension pneumothorax, pneumomediastinum; Tumours common complications and acute complications of pulmonary and metastatic tumours; Vascular disorders pulmonary embolism; Other disorders: acute lung injury, atelectasis, ARDS, spontaneous pneumothorax.

15. PSYCHIATRIC AND BEHAVIOUR DISORDERS:

Behaviour disorders affective disorders, confusion and consciousness disturbances, intelligence disturbances, memory disorders, perception disorders, psycho-motor disturbances, thinking disturbances; Common psychiatric emergencies acute psychosis, anorexia and bulimia complications, anxiety and panic attacks, conversion disorders, deliberate self-harm and suicide attempt, depressive illness, personality disorders, substance, drug and alcohol abuse.

16. RENAL AND UROLOGICAL EMERGENCIES IN ADULTS AND CHILDREN:

Inflammatory and Infectious disorders epididymo-orchitis, glomerulonephritis, pyelonephritis, prostatitis, sexually transmitted diseases, urinary tract infections; Metabolic disorders acute renal failure, nephrotic syndrome, nephrolithiasis, uraemia; Traumatic and related problems urinary retention, testicular torsion; Tumours; Vascular disorders: Ischaemia and Bleeding; Other disorders comorbidities in dialysis and renal transplanted patients, complications of urological procedures and devices, haemolytic uraemic syndrome

17. TRAUMA IN ADULTS AND CHILDREN:

Origin of trauma: burns, blunt trauma, penetrating trauma; Anatomical location of trauma: head and neck, maxillo-facial, thorax, abdomen, pelvis, spine, extremities; Polytrauma patient; Trauma in specific populations: children, elderly, pregnant women.

B. COMMON PRESENTING SYMPTOMS

1. ACUTE ABDOMINAL PAIN:

Gastrointestinal causes, Cardiac/vascular causes, Dermatological causes, Endocrine and metabolic causes, Gynaecological and Obstetric causes, Haematological causes, Musculo-skeletal causes, Renal and Genitourinary causes, Respiratory causes, Toxicology, Trauma

2. Altered Behaviour and Agitation:

Psychiatric causes, Cardiac/Vascular causes, Endocrine and metabolic causes, Neurological causes, Toxicology

3. Altered Level of Consciousness in Adults and Children:

Neurological causes, Cardiovascular causes, Endocrine and metabolic causes, Gynaecological and Obstetric causes, Infectious causes, Psychiatric causes, Respiratory causes, Toxicology

4. Back Pain:

Musculo-Skeletal causes, Cardiovascular causes, Infectious causes, Endocrine and metabolic causes, Gastrointestinal causes, Dermatological causes, Gynaecological causes, Haematological and Oncological causes, Neurological cause, Renal and Genitourinary causes, Trauma

5. Bleeding (Non Traumatic):

Ear, Nose, Throat causes; Gastrointestinal causes, Gynaecological and Obstetric causes, Renal and Genitourinary causes, Respiratory causes

6. Cardiac Arrest:

Cardiac arrest treatable with defibrillation, Pulseless electric activity, Asystole

7. Chest Pain:

Cardiac/vascular causes, Respiratory causes; Pneumonia, pneumomediastinum, Gastrointestinal causes, Musculo-Skeletal causes, Psychiatric causes, Dermatological causes

8. Crying Baby:

I – Infections: herpes stomatitis, meningitis, osteomyelitis, urinary tract infection

T – Testicular torsion, trauma, teeth problems,

C – Cardiac: arrhythmias, congestive heart failure

R -Reaction to milk, reaction to medications, reflux

I - Immunisation and allergic reactions, insect bites

E – Eye: corneal abrasions, glaucoma, ocular foreign bodies

S – Some gastrointestinal causes: hernia, intussusception, volvulus

9. Diarrhea:

Infectious causes, Toxicological causes, Endocrine and metabolic causes, Gastrointestinal causes, Haematological and Oncological causes, Immunology, Psychiatric disorders

10. Dyspnoea:

Respiratory Causes, Cardiac/vascular causes; Ear, Nose, Throat causes; Fluid & Electrolyte disorders, Gastrointestinal causes, Immunological causes, Metabolic causes, Neurological causes, Psychiatric disorders, Toxicology, Trauma

11. Fever and Endogenous Increase in Body Temperature:

Systemic infectious causes, Organ-specific infectious causes, Non-infectious causes, Haematological and Oncological causes, Immunological causes, Musculo-Skeletal causes, Neurological causes, Psychiatric causes, Renal and Genitourinary causes, Toxicology

12. Headache in Adults and Children:

Vascular causes, Haematological and Oncological causes, Immunological causes, Infectious causes, Musculo-Skeletal causes, Neurological causes, Ophthalmological causes, Toxicology, Trauma

13. Jaundice:

Gastrointestinal causes, Cardiac/Vascular causes, Haematological and Oncological causes, Infectious causes, Gynaecological causes, Toxicology

14. Pain in Arms:

Cardiac/Vascular causes, Musculo-skeletal causes, Trauma.

15. Pain in Legs:

Cardiac/Vascular causes, Immunological causes, Infectious causes, Musculo-Skeletal causes, Neurological causes, Nervous system causes, Trauma

16. Palpitations:

Cardiac/Vascular causes, Endocrine and metabolic causes, Toxicology

17. Seizures in Adults and Children:

Neurological causes, Cardiac/Vascular causes, Endocrine and metabolic causes, Gynaecological causes, Infectious causes, Psychiatric causes, Respiratory causes, Toxicology

18. Shock in Adults and Children:

Anaphylactic, Cardiogenic, Hypovolaemic, Obstructive, Septic, Neurogenic, Cardiac /Vascular causes, Endocrine and metabolic causes, Fluid and Electrolyte disorders, Gastrointestinal causes, Gynaecological causes, Immunological causes, Infectious causes, Neurological causes, Trauma

19. Skin Manifestations in Adults and Children:

Dermatological causes, Immunological causes, Infectious causes, Psychiatric causes, Toxicology, Haematological and Oncological causes

20. Syncope:

Cardiac/vascular causes, Endocrine and metabolic causes, Fluid and Electrolyte disorders, Gastrointestinal causes, Neurological causes, Toxicology

21. Urinary Symptoms (Dysuria, Oligo/Anuria, Polyuria):

Renal and Genitourinary causes, Cardiac/Vascular causes, Endocrine and metabolic causes, Fluid and Electrolyte disorders

22. Vertigo and Dizziness:

Ear and Labyrinth causes, Cardiac/Vascular causes, Endocrine and metabolic causes, Haematological and Oncological causes, Nervous system causes, Psychiatric causes, Respiratory causes, Toxicology

23. Vomiting:

Gastrointestinal causes, Cardiac/Vascular causes; Ear, Nose, Throat causes; Endocrine and metabolic causes, Fluid and Electrolyte disorders, Gynaecological and Obstetric causes, Infectious causes, Neurological causes, Ophthalmological causes, Psychiatric causes, Renal and Genitourinary causes, Toxicology

C. SPECIFIC ASPECTS OF EMERGENCY MEDICINE

1. ABUSE AND ASSAULT IN ADULTS AND CHILDREN:

Abuse in the elderly and impaired, Child abuse and neglect, Intimate partner violence and abuse, Sexual assault, Patient safety in Emergency Medicine, Violence management and prevention in the Emergency Department.

2. ANALGESIA AND SEDATION IN ADULTS AND CHILDREN:

Pain transmission (anatomy, physiology, pharmacology); Pain assessment; Pharmacology of sedative and pain relieving drugs; Psychological and social aspects of pain in paediatric, adult and elderly patients

3. DISASTER MEDICINE:

Disaster preparedness; Major incident planning/procedures/practice; Disaster response; Mass gatherings; Specific medical topics (triage, bioterrorism, blast and crush injuries, chemical agents, radiation injuries); Debriefing and mitigation

4. ENVIRONMENTAL ACCIDENTS IN ADULT AND CHILDREN:

Electricity (electrical and lightning injuries); Flora and Fauna (injuries from exposure, bites and stings); High-altitude (medical problems); NBCR (nuclear, biological, chemical and radiological: decontamination, specific aspects); Temperature (heat and cold related emergencies); Travel medicine; Water (near-drowning, dysbarism and complications of diving, marine fauna).

5. FORENSIC ISSUES:

Basics of relevant legislation in the country of practice; Recognise and preserve evidence; Provide appropriate medical documentation (including forensic and clinical photography, collection of biological samples, ballistics); Appropriate reporting and referrals (e.g. child abuse or neglect, gunshot and other forms of penetrating wounds, elder abuse, sexual assault allegations); Medico-legal documentation.

6. INJURY PREVENTION AND HEALTH PROMOTION:

Collection and interpretation of data related to prevention and health promotion; Epidemiology of Accidents and Emergencies; Formulation of recommendations.

7. PATIENT MANAGEMENT ISSUES IN EMERGENCY MEDICINE:

Emergency Department organization (administration, structure, staffing, resources); Management of specific populations: Children in special circumstances including child protection Elderly patients Homeless patients Mentally incompetent adults Psychiatric patients.

8. PROBLEMS IN THE ELDERLY:

Atypical presentations (e.g. abdominal pain, infections, myocardial infarction), Delirium, Dementia, Falls (causes & investigations), Immobility, Multiple pathology and multiple therapies, Self-dependency; Trauma & co-morbidity.

9. TOXICOLOGY IN ADULTS AND CHILDREN:

General principles of toxicology and management of poisoned patients; Principles of drug interactions; Specific aspects of poisoning drugs (including paracetamol, amphetamine, anticholinergics, anticonvulsants, antidepressants, antihypertensives, benzodiazepines, digitalis, monoamine oxidase inhibitors, neuroleptics) industrial, chemicals plants & mushrooms alcohol abuse and alcohols poisoning drugs of abuse; Local poisonings such as OPC, aluminium phosphide, yellow phosphorous, heavy metal poisoning, plant poisonings, paraquat poisoning, cyber methrine poisoning, corrosives petroleum products, methanol and ethanol, dyes and nitrobenzene; Organization and information (e.g. poison centres, databases).

10. PRE-HOSPITAL CARE:

Emergency Medical Services organisation (administration, structure, staffing, resources); Medical transport (including neonates and children, air transport); Paramedic training and function; Safety at the scene; Collaboration with other emergency services (e.g. police, fire department)

11. PSYCHO-SOCIAL PROBLEMS:

Social wellbeing of specific populations, Patients with social issues, Frequent visitors, Social care following discharge.

D. CORE CLINICAL PROCEDURES AND SKILLS

CPR skills, Airway management skills, Analgesia and sedation skills, Breathing and ventilation management skills, Circulatory support and cardiac skills and procedures, diagnostic procedures and skills, Ent skills and procedures, Gastrointestinal procedures, Genitourinary procedures, Hygiene skills and procedures, Musculoskeletal techniques, Neurological skills and procedures, Obstetric and gynaecological skills and procedures, Ophthalmic skills and procedures, Temperature control procedures, Transportation of the critically ill patient, Wound management:

E. RESEARCH METHODOLOGY.

F. MEDICO LEGAL ASPECTS RELEVANT TO THE DISCIPLINE.

G. INDIAN MEDICAL COUNCIL (PROFESSIONAL CONDUCT, ETIQUETTE AND ETHICS) REGULATIONS, 2002.

H. CURRENT TRENDS AND RECENT ADVANCEMENTS IN THE FIELD OF EMERGENCY MEDICINE.