- **Syllabus / Competencies**

The candidate must have gained experience in the diagnosis and treatment of patients from various disciplines with serious medical and surgical diseases. During the training the candidate must gain knowledge in two aspects - The knowledge about pathophysiology, diagnosis and treatment of a series of disease processes and skills of specific procedures and interventions that the candidate must be able to perform.

- **Theoretical Knowledge**

The candidate must understand the pathophysiology, construct a differential diagnosis and apply the appropriate prophylactic and therapeutic interventions in the following disorders. This list is not comprehensive.

- **Respiratory**

Management of airways (including respiratory arrest, upper airways obstruction, smoke or burns airways damage), pulmonary edema, Acute Respiratory Distress Syndrome (ARDS) and hypercapnic respiratory failure, severe asthma, chest trauma, respiratory muscle disorders, thoracic surgery.

- **Cardiovascular**

Haemodynamic instability and shock, cardiac arrest acute myocardial infarction and unstable angina severe heart failure, common arrhythmias and conduction disturbance, specific cardiac disorders (cardiomyopathies, valvular heart disease, atrial or ventricular septal defects, myocarditis), cardiac tamponade, pulmonary embolism, aortic dissection, hypertensive crisis, peripheral vascular diseases. cardiovascular surgery, current Knowledge and skills to perform Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS).

- **Neurology**

Coma, head trauma, intracranial hypertension, cerebrovascular accidents, cerebral vasospasm, meningo-encephalitis, acute neuromuscular disease (including myasthenia &Guillain-Barre syndrome), post anoxic brain damage, acute confusional states, spinal cord injury, neurosurgery, brain death.

- **Renal**

Oliguria. Acute renal failure, renal replacement therapy

- **Metabolic & Nutritional**

Fluid electrolyte and acid-base disorders, endocrine disorders (including diabetes), nutritional requirements, monitoring of nutrition.

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- **Haematological**

Disseminated intravascular coagulation and other coagulation disorders, haemolytic syndromes, anaemia, leukemias , thrombocytopenias, blood component therapy, and immune disorders.

- **Infections**

Severe infection due to aerobic and anaerobic bacteria, viruses, fungal and parasites, nosocomial infection, infection in the immunocopromised, tropical disease, antimicrobial therapy, immunotherapy and infection control practices.

- **Gastro-intestinal**

Inflammatory bowel diseases, pancreatitis, acute and chronic liver failure, prevention and treatment of acute G.I. Bleeding (including variceal bleeding) peritonitis, mesenteric infarction, perforated viscus, bowel obstruction, abdominal trauma, abdominal surgery

- **Obstetric**

Toxemia (including HELLP syndrome), amniotic fluid embolism, eclampsia, and haemorrhage.

- **Environmental Hazards**

Burns, hypo-and hyperthermia, near-drowning electrocution, radiations, chemical injuries, animal bites.

- **Toxicology, poisoning**

Acute intoxications, drug overdose, serious adverse reactions, anaphylaxis.

- **General**

Pharmacology, pharmacokinetics and drug interactions. Analgesia, sedation and muscle relaxants, inflammation and anti-inflammatory agents, multiple trauma, transport of the critically ill, management of the organ donor.

➢ Interventions and procedures

- **Respiratory**

Maintenance of open airway, endotracheal intubation (oral and nasal) and emergency cricothyrotomy, suctioning of the airway, , titration of oxygen therapy, use of AMBU bag, use of mechanical ventilator with different modes of ventilation,techniques of weaning from mechanical ventilation, placement of a intercostal tube, implementation of respiratory pharmacological support, fiberoptic bronchoscopy, interpretation of arterial and mixed venous blood gases, assessment of gas exchange and respiratory mechanics, indications for tracheostomy, Percutaneous versus Surgical Tracheostomy, options for tracheostomy tubes, management of patient with tracheostomy.

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- **Cardiovascular**

Placement of a central venous catheter (by different routes), pulmonary artery (Swan Ganz) catheter, arterial catheter (by different routes) measurement and interpretation of the hemodynamic variables (including the derived variables), use of ultrasound, implementation of cardiovascular support, antiarrhythmic therapy and thrombolysis.

- **Neurologic**

Basic interpretation of brain CT/MRI scan, lumbar puncture, and , intracranial pressure monitoring

- **Nutrition**

Implementation of intravenous fluid therapy, enteral and parental nutrition.

- **Haematologic**

Correction of haemostatic and coagulation disorders, interpretation of a coagulation profile, correct administration of blood component therapy.

- **Renal**

bladder catheterization, placement of dialysis catheters and institution of renal replacement therapy

- **Gastro-intestinal**

Placement of gastric tube, an esophageal and gastric tamponade balloon catheter, ascietic tapping, Intraabdominal pressure monitoring and interpretation,

- **General Aspects**
  - Measurement of severity of illness and outcome assessment. Exposure to clinical research, ethical and legal aspects of critical care.
  - Participation in regional and national CME's, seminars, conferencesand workshops in critical care

ELIGIBILITY CRITERIA: MD/DNB in Anaesthesiology, Medicine, Pulmonary/ Respiratory Medicine or Emergency Medicine.

No of Seats: 06 seats as per discussion in the meeting held on 21.08.2019 in Board Room of Vice Chancellor's Office, which was presided by Hon'ble Vice Chancellor in presence of Dean Faculty of Medicine & Controller of Examination.

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