**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[DM 0822]** **AUGUST 2022** **Sub. Code :1488**

**D.M. – CRITICAL CARE MEDICINE**

**Paper III – SPECIALISED CRITICAL CARE**

***Q.P. Code: 161488***

**Time: Three Hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 15 = 30)**

1. Describe the WFNS and Fisher's score for Subarachnoid grading. What are the limitations of using these scores in the first 24 hours after the onset of SAH to determine prognosis? How would you manage a patient with subarachnoid haemorrhage in your ICU?

2. What do you understand by the term 'balanced crystalloid solution'? Compare and contrast the constituents of normal saline and any one balanced crystalloid solution. Discuss the advantages and disadvantages of balanced crystalloid solutions and normal saline in the fluid management of diabetic ketoacidosis.

**II. Write short notes on:** **(10x7=70)**

1. With regards to veno-arterial extra-corporeal membrane oxygenation (VA-ECMO):
   a. List six major conditions for which VA-ECMO is indicated.
   b. List four contraindications for VA-ECMO.
   c. List four life threatening complications of VA-ECMO.
2. How would you reduce the red cell transfusion requirements in an actively bleeding multiple trauma patient?
3. Outline the pathophysiology, diagnosis and management of acalculous cholecystitis in the critically ill.
4. Discuss the role of resuscitative endovascular balloon occlusion of the aorta (REBOA) in resuscitation. Include in your answer: brief description, mechanism of action, potential indications, contraindications, and complications.
5. Compare and contrast treatment options for the management of acute oesophageal variceal bleeding following correction of coagulopathy?
6. Critically evaluate the role of Decompressive Craniectomy (DC) following traumatic brain injury.
7. A 75-year-old male is admitted to your ICU for management of severe chest pain from unilateral rib fractures with a flail segment following major blunt chest trauma. He has no other injuries. He is hemodynamically stable with a respiratory rate of 30 breaths/min and oxygen saturation of 99% on room air. Discuss the available options for analgesia, including their advantages and disadvantages.

8. Compare and contrast Serotonin Syndrome with Neuroleptic Malignant Syndrome.
9. Donation after cardiac death.
10. Non-invasive neuromonitoring in the ICU.

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**[DM 0822]**

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[DM 0124] JANUARY 2024 Sub. Code :1488**

**D.M. – CRITICAL CARE MEDICINE**

**PAPER III – SPECIALISED CRITICAL CARE**

***Q.P. Code: 161488***

**Time: Three Hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 15 = 30)**

1. Write short notes on recent recommendations of traumatic brain injury. A 30 years old man who is admitted to the ICU has an ICP of 16 mmHg. Over the last 1 hour, he has developed anisocoria and ICP has increased to 26 mm Hg. How will you manage this patient?
2. 35 year old lady has been brought to the emergency department after being extricated from closed room fire. She is not awake, with tachycardia of 130, blood pressure 90/70 mmHg, Respiratory rate of 36 breaths per minute and a SpO2 of 99%. The estimated burn area is 30%. How would you manage this patient for the next 24 hours?

**II. Write notes on:** **(10 x 7 = 70)**

1. What is MELD score? Briefly write about the clinical utility of MELD score.
2. What are the available mechanical support devices? Briefly describe the operation and principles of Intra-aortic balloon pump.
3. Write short notes on pulmonary renal syndrome.
4. What do you understand by the term Damage Control Resuscitation?
5. What is the latest classification of acute kidney injury? Name and discuss briefly the non-renal failure indications for renal replacement therapy in critically ill patients.
6. Discuss the management of unilateral flail chest.
7. What are the challenges in resuscitating a pregnant lady of 30 weeks of Gestation who suffers a cardiac arrest?
8. How would you prognosticate a 65 years old man who suffered a cardiac arrest resuscitated and clinically suspected to have hypoxic ischemic encephalopathy?
9. Write short notes on thrombotic thrombocytopenic purpura.
10. What is extracorporeal carbon-di-oxide removal? Discuss the usefulness of ECCOR in critical illness.

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**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[DM 0225]** **FEBRUARY 2025** **Sub. Code :1488**

**D.M. – CRITICAL CARE MEDICINE**

**PAPER III – SPECIALISED CRITICAL CARE**

***Q.P. Code: 161488***

**Time: Three Hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 15 = 30)**

1. Outline the ICU management of a 25-year-old male who has fulfilled brain death criteria and is awaiting surgery for organ donation.

2. A 30-year-old male with a history of a diarrheal illness 2-weeks back has now come with a 3-day history of rapidly progressive ascending weakness with minimal sensory symptoms. He is self-ventilating. How would you evaluate and manage this patient?

**II. Write notes on:** **(10 x 7 = 70)**

1. Critically evaluate early versus late initiation of Renal Replacement Therapy (RRT) in the critically ill patient.

2. Discuss the methods and principles to optimise bronchodilator use in the ventilated patient.

3. Enumerate static and dynamic indices for volume status.

4. Compare and contrast the advantages and disadvantages of humidification of a ventilator circuit using a wet circuit versus a Heat and Moisture Exchanger.

5. Therapeutic plasma exchange in the ICU.

6. Describe the stages in designing a clinical trial.

7. Methods to determine optimal PEEP in ARDS.

8. Tools to assess microcirculation.

9. What are the principles of management of a 75-year-old bed bound woman with severe COPD who is intubated in the Emergency department due to type 2 respiratory failure? What will you do in this situation?

10. Methods to decrease Patient self-inflicted lung injury.

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**THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY**

**[DM 0126]** **JANUARY 2026** **Sub. Code :1488**

**D.M. – CRITICAL CARE MEDICINE**

**PAPER III – SPECIALISED CRITICAL CARE**

***Q.P. Code: 161488***

**Time: Three Hours** **Maximum: 100 Marks**

**I. Elaborate on:** **(2 x 15 = 30)**

1. A 30-year-old woman with known severe mitral stenosis in the third trimester of pregnancy has come with pulmonary edema and new onset atrial fibrillation. She is initiated on non-invasive ventilatory support. How would you manage this patient?

2. A 35-year-old male presented to the emergency department with burns involving his face, mouth, trunk and groin. Outline your assessment and management of this patient.

**II. Write notes on:** **(10 x 7 = 70)**

1. Discuss the causes, evaluation, and management of respiratory failure in a patient with myasthenia gravis.
2. Intracranial pressure monitoring.
3. Evaluation of post-operative fever on day 4 in the critically ill intubated patient post esophagectomy.
4. Clearance of the Cervical spine.
5. Diffuse alveolar hemorrhage in ANCA related vasculitis-diagnosis and management.
6. Management of pelvic fractures and associated hemodynamic instability in trauma critical care.
7. Haemophagocytic Lymphohistiocytosis (HLH): triggers, diagnostic criteria, and ICU management strategies.
8. Pacemaker sensing problems-diagnosis and management.
9. Therapeutic plasma exchange in the ICU.
10. Air transport of critically ill patients.

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