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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (EMERGENCY MEDICINE) DEGREE EXAMINATION – APRIL 2022
PAPER I

Friday, April 01, 2022

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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- ✍ **Answer ALL questions.**
 - ✍ **Draw neatly labelled diagrams and algorithms wherever necessary.**
 - ✍ **Please avoid padding your answers.**
1. Add a short note on pathophysiology of Ischemic injury in neuronal tissue. Discuss the principles of Magnetic Resonance Imaging. Add a note on correlation with ischemic stroke with the MRI finding changes over time.

(4+3+3 = 10 marks)
 2. Discuss the anatomy of typical neuron. Briefly describe physiology of conduction of a neuronal impulse. Discuss the pathophysiology of peripheral nerve injury.

(3+3+4 = 10 marks)
 3. Discuss the Juxtaglomerular apparatus. Discuss the Renin angiotensin aldosterone axis and enlist the pharmacological agents working on it. Write a short note on blood pressure regulation in human body.

(3+2+5 = 10 marks)
 4. Discuss the anatomy of a cortical nephron. Discuss the pathophysiology of acute kidney injury. Add a note on the findings in Urinalysis useful in Emergency Medicine for identifying various renal pathologies.

(3+3+4 = 10 marks)
 5. Discuss the Oxygen cascade. Discuss the various interphases in oxygen therapy. Add a note on oxygen toxicity.

(3+3+4 = 10 marks)
 6. Discuss the anatomy of brachial plexus. Discuss the pharmacologic properties of any two local anaesthetic agents. Add a note on management of local anaesthetic toxicity.

(3+3+4 = 10 marks)
 7. Discuss the pathophysiology of shock and classification. Discuss pharmacology of any two first line vasopressors used in the management of shock. Add a note on response to fluid challenge in hypovolemic shock.

(4+3+3 = 10 marks)

8. Discuss the fibrinolytic pathway. Discuss the pharmacology of any two drugs acting on this pathway.
(6+4 = 10 marks)
9. Discuss the mechanisms of Sodium balance in human body. Add a note on classification of hyponatremia.
(7+3 = 10 marks)
10. Enlist the lobes of liver. Add a note on the Anatomy of a liver lobule. Discuss the pathophysiology and various patterns of involvement in liver injury based on this. Discuss the hepatic arterial buffer response.
(2+3+3+2 = 10 marks)



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PAPER II

Saturday, April 02, 2022

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Draw neatly labelled diagrams and algorithms wherever necessary**

✍ **Please avoid padding your answers.**

1. Discuss the aetiology, pathophysiology, clinical features, complications, differential diagnosis, and Emergency Medicine management and disposition of acute fulminant Hepatic failure.
2. Discuss the aetiology, pathophysiology, clinical features, differential diagnosis, and algorithmic management and disposition of a sexually active 35 year old male presenting with microscopic hematuria to Emergency Medicine.
3. Discuss the plan for conscious sedation for a 5 year old 18 kg boy with lip laceration to be repaired in Emergency Medicine.
4. Write down the management of a 25 year old lady with supraventricular tachycardia not responding to carotid massage with complains of dyspnoea as per AHA ACLS algorithm.
5. Discuss the approach and management plan for 46 year old chronic alcoholic man a known case of seizure disorder following a previous trauma presenting to Emergency Medicine with generalised tonic clonic convulsions.
6. Discuss the clinical presentations, differential diagnosis, severity assessment, Emergency Medicine management and disposition of a case of acute exacerbation of bronchial asthma.
7. Discuss the Emergency Medicine evaluation and stabilisation of a case of suspected thyroid storm in a patient referred from the postoperative ICU of a peripheral hospital following a hernia surgery.
8. Discuss the clinical features, differential diagnosis, complications, diagnostic evaluation, management and disposition of a case of pemphigus vulgaris presenting in Emergency Medicine.
9. Discuss the Emergency Medicine management of a acutely and combative 36-year-old male with no previous psychiatric history.
10. Discuss the Emergency Medicine approach, differential diagnosis, management and disposition of a 56 year old female patient presenting with a thunder clap headache.

(10 marks × 10 = 100 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
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PAPER III

Monday, April 04, 2022

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ **Answer ALL questions.**
- ✍ **Draw neatly labelled diagrams and algorithms wherever necessary.**
- ✍ **Please avoid padding your answers.**

1. Discuss the classification of pelvic fractures, clinical and radiological features, complications and management of pelvic trauma.
2. Discuss the pathophysiology, clinical features, differential diagnosis, diagnostic scoring, investigative work up, treatment and disposition of acute appendicitis.
3. Discuss the toxic dose, clinical features, diagnostic work up, and definitive management and disposition of Tricyclic antidepressants in emergency medicine.
4. Discuss the pathophysiology including systemic effects, clinical features Emergency Medicine Management and disposition of Hymenoptera stings.
5. Discuss the pathophysiology, clinical features, differential diagnosis, complications investigations and Emergency Medicine management of acute angle closure glaucoma.
6. Discuss the aetiology, clinical features, differential diagnosis, complications investigations and Emergency Medicine management and disposition of nasal septal hematoma.
7. Discuss the early stabilization investigative work up, Emergency Medicine management and disposition of a haemophilia A affected 23-year-old man presenting with a minor head injury who was lost to follow up.
8. Discuss the clinical features, differential diagnosis, investigative work up, Emergency Medicine management and disposition of Transfusion Related Acute Lung Injury.
9. Discuss the signs, screening tool, risk assessment, Emergency Medicine management and disposition in 35-year-old female alleged to have been kicked by the partner in the abdomen two days back.
10. Discuss the Emergency Medicine evaluation, management and disposition of a 12-year-old girl presenting with 3 cm oblique pinna laceration following blunt trauma to the ear whose parents insisting no specialty consultation.

(10 marks × 10 = 100 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION
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PAPER IV

Tuesday, April 05, 2022

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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- ✍ **Answer ALL the questions.**
- ✍ **Draw neatly labelled diagrams and algorithms wherever necessary.**
- ✍ **Please avoid padding your answers.**
1. Discuss how you will set an emergency operations centre for your hospital for the outbreak of a new variant of the Novel Corona Virus SARS COVID-19 with a supposedly higher level of infectivity and mortality than the previous strains.
(10 marks)
 2. Discuss your specifications for architecture of a new propose emergency medicine department for your academic tertiary care centre.
(10 marks)
 3. Discuss your approach, differential diagnosis, and management of a 1-year-old child with stridor presenting to Pediatric Emergency Medicine unit.
(10 marks)
 4. A 26-year-old primi gravida presenting with a suspected cord prolapse at 35 weeks of gestation to the Emergency Medicine Department. Discuss your plan of care in this patient.
(10 marks)
 5. Discuss the research study designs in Emergency medicine. Compare and contrast case control studies and cohort studies.
(5+5 = 10 marks)
 6. Discuss the definition, diagnosis, and Confirmation Criteria for Brain Death.
(10 marks)
 7. Discuss the pathophysiology, clinical features, differential diagnosis, diagnostic work up, ED management and disposition of eclampsia in the setting of 26-year-old primi gravida presenting to Emergency Medicine Department.
(10 marks)
 8. Set a spotlight on the significant changes in guidelines in Surviving Sepsis campaign Guidelines 2021.
(10 marks)
 9. Discuss the approach to BRUE (Brief Resolved Unexplained Event) in Paediatrics.
(10 marks)
 10. Discuss Left Ventricular Assist Devices and guidelines in CPR for a patient with LVAD.
(10 marks)

