

MANIPAL UNIVERSITY

MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – OCTOBER 2016

SUBJECT: PAPER I: BASIC SCIENCES AS APPLIED TO ANAESTHESIOLOGY

Monday, October 17, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✗ Answer ALL the questions.
- ✗ Answer to the point as padding of answers will not fetch extra marks.
- ✗ Illustrate your answer with diagrams where appropriate.

1. With the help of a labeled diagram, describe the various phases of the cardiac cycle and its relationship to the arterial waveform, jugular venous pressure trace and electrocardiogram. Briefly describe any three cardiovascular reflexes and state their clinical relevance to the anaesthesiologist.

(15 marks)

2. Describe the effect of increasing altitude on the inspired partial pressure of oxygen (PIO_2). If barometric pressure at an altitude of 18,000 feet becomes half of that at sea level, calculate the PIO_2 while breathing air without oxygen enrichment. Describe how an individual living at a high altitude acclimatizes to reduced ambient pressure.

(15 marks)

3. Write briefly on:

- 3A. Describe the normal respiratory flow-volume loop and discuss the changes seen in a patient with chronic bronchitis and emphysema.
- 3B. Draw the haemoglobin oxygen dissociation curve and explain the various factors that shift this curve to the right and to the left.
- 3C. Enumerate the newer local anaesthetic agents and compare their toxicity with reference to bupivacaine.
- 3D. Explain the reasons why drugs are administered either transdermally or sublingually. Add a note on iontophoresis.
- 3E. Describe the pharmacological properties of xenon that make it an ideal inhalational anaesthetic agent.
- 3F. What do you understand by the term "halothane hepatitis"? Describe the causation and clinical features of this condition. Mention the test used to identify individuals prone to developing halothane hepatitis.

- 3G. Define *core temperature*. State the formulae for converting Fahrenheit scale to Celsius (and the reverse). Describe any two physical principles used to measure temperature in the operation theatre and intensive care unit.
- 3H. Describe the meanings of the terms *macroshock* and *microshock*. Explain the difference between monophasic and biphasic methods of delivery of electrical energy during cardioversion or defibrillation.
- 3I. With the help of a labeled diagram, describe the anatomy of the lumbar plexus and any one technique of lumbar plexus block.
- 3J. Describe the anatomy of the internal jugular vein and any one technique of internal jugular venous cannulation.

(7 marks \times 10 = 70 marks)



MANIPAL UNIVERSITY

MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – OCTOBER 2016

SUBJECT: PAPER II: ANAESTHESIA IN RELATION TO ASSOCIATE SYSTEMIC DISEASES

Tuesday, October 18, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

✍ Long Essays:

1. Classify pregnancy induced hypertension according to ACOG guidelines. Describe the anaesthetic management of a pregnant lady of 36 wks of gestation with features of HELLP Syndrome.

(15 marks)

2. Describe the anaesthetic management and the post operative problems in a 20 yr old female patient scheduled for squint correction.

(15 marks)

3. Write short notes on:

3A. Hazards of Laser surgery during laryngeal surgery

3B. Anaesthetic implications of Electroconvulsive therapy

3C. Diabetic Ketoacidosis

3D. Bainbridge reflex

3E. APGAR Scoring System

3F. Post operative Cognitive Disorder in elderly

3G. Interscalene block

3H. Post operative pain relief for a child after Herniotomy

3I. Hepatorenal Syndrome

3J. Suxamethonium in patients with thermal injury

(7 marks × 10 = 70 marks)



MANIPAL UNIVERSITY**MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – OCTOBER 2016****SUBJECT: PAPER III: ANAESTHESIA IN RELATION TO SUB SPECIALITIES**

Wednesday, October 19, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ Answer ALL the questions.
- ✍ Answer to the point as padding of answers will not fetch extra marks.
- ✍ Illustrate your answer with diagrams where appropriate.

1. Discuss the preoperative preparation and perioperative management of a 55-year old patient with an aneurysm in the ascending aorta scheduled for elective repair of the same with a prosthetic graft insertion.

(15 marks)

2. Discuss the preoperative evaluation, anaesthetic management and postoperative analgesia for a 70-year old patient with renal cell carcinoma of the right kidney posted for radical nephrectomy.

(15 marks)

3. Write briefly on:

- 3A. Anaesthetic management for repair of bronchopleural fistula
- 3B. Indications for one-lung ventilation and the techniques available for lung isolation
- 3C. Pathophysiology and diagnosis of raised intracranial tension (including methods of reducing the intracranial tension)
- 3D. Clinical manifestations and treatment of fat embolism syndrome
- 3E. Anaesthetic management of a neonate with tracheoesophageal fistula
- 3F. Anaesthetic considerations in a neonate with intestinal obstruction due to sigmoid volvulus
- 3G. Current guidelines for preoperative fasting and intraoperative fluid management in paediatric age group
- 3H. Induction of anaesthesia in a 2-year old child with stridor
- 3I. Objectives and clinical conduct of monitored anaesthesia care
- 3J. Occupational hazards for the anaesthesiologist and measures that can be taken to prevent/minimise the same

(7 marks × 10 = 70 marks)



MANIPAL UNIVERSITY

MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – OCTOBER 2016

SUBJECT: PAPER IV: INTENSIVE CARE MEDICINE, PAIN MEDICINE AND
RECENT ADVANCES

Thursday, October 20, 2016

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ Answer ALL the questions.
- ✍ Answer to the point as padding of answers will not fetch extra marks.
- ✍ Illustrate your answer with diagrams where appropriate.

1. Describe the clinical features and management of a young adult with organophosphorus compound ingestion.

(15 marks)

2. Describe how you would prepare a patient and conduct awake fiberoptic intubation for a patient scheduled for elective surgery.

(15 marks)

3. Write briefly on:

3A. Management of cardiac arrest in a full term pregnant woman

3B. Indications for insertion of a permanent pacemaker and anaesthetic considerations for insertion of a permanent pacemaker

3C. Selection criteria for and clinical conduct of acute isovolaemic haemodilution

3D. Aetiopathogenesis, clinical features, laboratory findings and treatment of a patient diagnosed to have disseminated intravascular coagulation in the intensive care unit

3E. Oxygen therapy devices

3F. Recent trends in haemodynamic stabilisation of septic shock

3G. Pathophysiological mechanisms of pain perception in chronic pain syndromes

3H. Nonpharmacological interventions in chronic pain

3I. Illustrate (with examples) the use of the following diagrams in research – pie charts, Bland-Altman plot, Receiver Operating Characteristic (ROC) curve

3J. Recombinant factor VII

(7 marks × 10 = 70 marks)

