

MANIPAL UNIVERSITY

MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – APRIL 2013

SUBJECT: PAPER I: BASIC SCIENCES AS APPLIED TO ANAESTHESIOLOGY

Tuesday, April 02, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ Write brief answers (avoiding unnecessary padding).
✍ Draw diagrams where appropriate.

1. Describe coronary circulation. What are the factors which affect myocardial oxygen supply and demand?
(6+4 = 10 marks)
2. How is carbon dioxide transported in the body? Add a note on Haldane effect.
(7+3 = 10 marks)
3. What are the ECG changes seen in acute hyperkalaemia? Describe the management of acute hyperkalaemia.
(2+8 = 10 marks)
4. What are the functions of the liver? Describe the liver function tests.
(5+5 = 10 marks)
5. Compare and contrast Mivacurium and Atracurium with respect to:
5A. Onset of action
5B. Duration of action
5C. Volume of distribution
5D. Metabolism
5E. Elimination
(2×5 = 10 marks)
6. Classify intravenous anaesthetic agents. Compare and contrast thiopentone and propofol with respect to its effect on:
a) Cardiovascular system b) Respiratory system c) Central nervous system
(2+4+2+2 = 10 marks)
7. What are the principles in functioning of pulse oximetry? List the different sites for probe placement. What are the limitations and disadvantages of pulse oximeter?
(4+2+4 = 10 marks)

8. What is fire triangle? What are the sources of fire in the operating room (OR)? Briefly describe management of OR fires.

(2+2+6 = 10 marks)

9. Describe the technique of performing the interscalene brachial plexus block. Add a note on the indications and complications related to this block.

(6+4 = 10 marks)

10. Describe femoral block under the following headings:

10A. Anatomy

10B. Clinical applications

10C. Technique

10D. Complications

(2+2+4+2 = 10 marks)



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MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – APRIL 2013
SUBJECT: PAPER II: ANAESTHESIA IN RELATION TO ASSOCIATE SYSTEMIC
DISEASES

Wednesday, April 03, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ Answer ALL questions. Write brief answers (avoiding unnecessary padding).
✍ Draw diagrams where appropriate.

1. A 23-year-old primigravida diagnosed to have severe pre-eclampsia, oliguria and HELLP syndrome is scheduled for emergency caesarean section. Discuss the perioperative concerns and anaesthetic management of this lady.
(10 marks)
2. A 52-year-old lady is scheduled for hysteroscopic excision of a subendometrial fibroid. Enumerate the complications associated with this technique. Describe your plan for anaesthetic management for this procedure.
(5+5 = 10 marks)
3. Describe the algorithm used for newborn resuscitation in the labour suite. Enumerate the equipment essential for neonatal resuscitation.
(6+4 = 10 marks)
4. Describe the physiological effects caused by spinal anaesthesia affecting high thoracic segments. Enumerate the contraindications for spinal anaesthesia.
(6+4 = 10 marks)
5. Describe the anatomy of a typical intercostal nerve. Enumerate the indications and explain the technique of intercostal nerve block.
(3+3+4 = 10 marks)
6. Describe the adjuvants used with local anaesthetics and their advantages.
(7+3 = 10 marks)
7. Design a patient controlled analgesia plan for a 48-year-old man without any comorbid illnesses who has undergone radical nephrectomy. Add a note on the advantages and disadvantages of patient controlled analgesia.
(6+4 = 10 marks)

8. Define *essential hypertension*. Classify hypertension. Describe the management of a 65-year old lady with a blood pressure of 230/120 mm Hg posted for emergency laparotomy for intestinal obstruction.

(1+3+6 = 10 marks)

9. Classify major burns. Describe the anaesthetic implications of a patient with a 20-day old history of 30% burns posted for split skin grafting.

(2+8 = 10 marks)

10. A healthy 70-year old man posted for a cataract extraction and insertion of an intraocular lens under monitored anaesthesia care becomes increasingly agitated and restless a few minutes following surgical incision. Describe how you would proceed in this situation. What considerations help determine the choice of sedatives and the techniques for their administration? Write briefly about regional anaesthetic techniques for cataract extraction.

(3+3+4 = 10 marks)



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MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – APRIL 2013

SUBJECT: PAPER III: ANAESTHESIA IN RELATION TO SUB SPECIALITIES

Thursday, April 04, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ Answer ALL questions.
- ✍ Write brief answers (avoiding unnecessary padding).
- ✍ Draw diagrams where appropriate.

1. Describe the anaesthetic considerations and management of a 72-year old man posted for carotid endarterectomy.
(5+5 = 10 marks)
2. A 68-year old with previous history of massive inferior wall myocardial infarction 2 months prior is now on a demand pacemaker. Describe the preoperative evaluation and anaesthetic management of this patient posted for an elective hernioplasty of an upper abdominal incisional hernia.
(4+6 = 10 marks)
3. Describe the preoperative preparation and perioperative management of emergency appendicectomy in a patient with acute exacerbation of chronic obstructive pulmonary disease.
(4+4+2 = 10 marks)
4. Discuss the perioperative anaesthetic management plan for a 25-year old man scheduled for excision of a pituitary tumour through a bifrontal craniotomy.
(5+5 = 10 marks)
5. Describe the features of reaction to bone cement during total hip replacement. Discuss the measures that can prevent/reduce the severity of this reaction. Outline your plan of management of a severe reaction to bone cement.
(3+3+4 = 10 marks)
6. Describe the perioperative management of a post-renal transplant patient scheduled for open reduction and internal fixation of fracture shaft of femur.
(10 marks)
7. Detail the anaesthetic concerns and perioperative management of a 24-hour old term neonate diagnosed to have proximal oesophageal atresia with a distal tracheoesophageal fistula.
(5+5 = 10 marks)

8. A 14-month-old child has a patent foramen ovale with left to right shunt and no other abnormalities. He is scheduled for left inguinal herniotomy. Discuss your anaesthetic concerns in this child and present a detailed anaesthetic plan for this patient (including the possible methods for providing postoperative analgesia).

(4+4+2 = 10 marks)

9. Discuss the factors determining the risks of transmission of the human immunodeficiency virus to theatre personnel. Describe how these risks can be minimised.

(4+6 = 10 marks)

10. What are the causes of fires in operation theatres? Describe the management and the preventive measures for such an emergency in the operation theatre.

(3+4+3 = 10 marks)



MANIPAL UNIVERSITY
MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – APRIL 2013
SUBJECT: PAPER IV: INTENSIVE CARE MEDICINE, PAIN MEDICINE AND
RECENT ADVANCES

Friday, April 05, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ **Answer ALL questions. Write brief answers (avoiding unnecessary padding).**
- ✍ **Draw diagrams where appropriate.**

1. How does the cardiopulmonary resuscitation protocol differ in the following situations?
 a) Pregnancy b) Neonates c) Drowning d) Electrocution
(10 marks)

2. Outline the current guidelines for the management of pulseless electrical activity.
(10 marks)

3. Explain the pathophysiology of flail chest and its management. Enumerate the options available for pain relief in such a patient.
(3+4+3 = 10 marks)

4. What are the different blood components that are currently available? Outline briefly the indications for transfusion of these products.
(4+6 = 10 marks)

5. **Define the following terms:**
 a) Sepsis b) Septic shock
 c) Multi-organ dysfunction syndrome d) Systemic inflammatory response syndrome
 Describe the management of severe hypotension in sepsis.
(4+6 = 10 marks)

6. Outline a plan for total parenteral nutrition for a 40-year-old male weighing 65 kg, suffering from severe acute pancreatitis requiring ventilatory care in the intensive care unit.
(10 marks)

7. Describe the steps of pain relief methods in a patient suffering from chronic backache.
(10 marks)

8. Explain pathophysiology of trigeminal neuralgia and various options for its management.
(4+6 = 10 marks)

8. A 14-month-old child has a patent foramen ovale with left to right shunt and no other abnormalities. He is scheduled for left inguinal herniotomy. Discuss your anaesthetic concerns in this child and present a detailed anaesthetic plan for this patient (including the possible methods for providing postoperative analgesia).

(4+4+2 = 10 marks)

9. Discuss the factors determining the risks of transmission of the human immunodeficiency virus to theatre personnel. Describe how these risks can be minimised.

(4+6 = 10 marks)

10. What are the causes of fires in operation theatres? Describe the management and the preventive measures for such an emergency in the operation theatre.

(3+4+3 = 10 marks)

