

MANIPAL UNIVERSITY

DIPLOMA IN ANAESTHESIOLOGY (DA) EXAMINATION – APRIL 2012

SUBJECT: PAPER I: BASIC SCIENCES AS APPLIED TO ANAESTHESIOLOGY: ANATOMY, PHYSIOLOGY, PHARMACOLOGY AND BIOCHEMISTRY, ETHICS, QUALITY ASSURANCE, MEDICOLEGAL ASPECTS

Monday, April 02, 2012

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ **Be brief in your answers; padding your answers will not get you any extra credit.**
 ✍ **Illustrate your answer with clearly labeled diagrams where appropriate.**

1. Define cardiac output. Describe the factors that determine cardiac output. (2+8 = 10 marks)
2. Describe the oxygen dissociation curve and enumerate the factors affecting the oxygen dissociation curve. Explain Haldane effect. (5+3+2 = 10 marks)
3. Describe the distribution of potassium in the body fluids. Give the approximate total body potassium content of a 70-kg, muscular male. Describe the role of potassium in the generation and maintenance of resting membrane potential of excitable tissues. (3+1+6 = 10 marks)
4. Classify opioid analgesics. Describe the mechanism of action, clinical uses and adverse effects of morphine. (3+2+2+3 = 10 marks)
5. Enumerate the major factors that determine the nerve conduction blocking properties of a local anaesthetic. Describe the effect of each on potency, speed of action, onset and duration of action. Describe how the actions of the local anaesthetic *in vivo* may be influenced by other factors also. (3+3+4 = 10 marks)
6. Describe the various devices available for confirmation of tracheal intubation. (10 marks)
7. Explain Hagen-Poiseuille's law and its applications in anaesthesia and critical care. (4+6 = 10 marks)
8. Describe the radiographic anatomy of heart and great vessels as seen in a posteroanterior view of a chest radiograph. With the help of appropriate diagrams, describe the ideal location of a central venous catheter placed through the right and the left subclavian veins. (5+5 = 10 marks)
9. Discuss the effect of epidural injection on intracranial pressure, shivering and intestinal blood flow. Briefly discuss the epidural test dose. (2+2+2+4 = 10 marks)
10. Describe the cutaneous nerve distribution of the upper limb. Explain the technique for performing interscalene brachial plexus block. (5+5 = 10 marks)



MANIPAL UNIVERSITY

DIPLOMA IN ANAESTHESIOLOGY (DA) EXAMINATION – APRIL 2012
SUBJECT: PAPER II: PRINCIPLES AND TECHNIQUES OF ANESTHESIA INCLUDING
REGIONAL ANESTHESIA

Tuesday, April 03, 2012

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Be brief in your answers; padding your answers will not get you any extra credit.**

✍ **Illustrate your answer with clearly labeled diagrams where appropriate.**

1. Discuss the physiological changes associated with aortic cross clamping during aortic vascular surgery and the therapeutic interventions available for its management. Add a note on the factors that affect the magnitude of these physiological changes.

(6+4 = 10 marks)

2. Classify and grade chronic obstructive pulmonary disease (COPD) on the basis of spirometry. Enumerate a few bedside pulmonary function tests. Discuss the preoperative and intraoperative measures that you would undertake for a patient with acute exacerbation of COPD scheduled for total gastrectomy.

(2+2+6 = 10 marks)

3. Enumerate the various positions used during neurosurgery. List the problems associated with sitting position. Outline the anaesthetic management of a 40-year old man with obstructive hydrocephalus scheduled for ventriculoperitoneal shunt.

(2+3+5 = 10 marks)

4. Discuss the anaesthetic implications and management plan of a 24-year old lady with eclampsia scheduled for emergency Caesarean delivery.

(10 marks)

5. Enumerate the risk factors for postoperative apnoea in a neonate. Outline a perioperative anaesthetic plan for a neonate with 40-weeks postconceptional age scheduled for inguinal herniotomy.

(2+8 = 10 marks)

6. Discuss the preoperative assessment and airway management plan for a 16 year old girl scheduled for laser excision of the laryngeal papillomata.

(4+6 = 10 marks)

7. Discuss the factors involved in the development of transurethral resection of prostate syndrome (TURP syndrome). Add a note on the pathophysiology and management of the TURP syndrome.
(3+3+4 = 10 marks)
8. Discuss the timing of neuraxial block in patients on the following drugs: aspirin, clopidogrel, low molecular weight heparin, cilostazol and unfractionated heparin.
(2+2+2+2+2 = 10 marks)
9. Enumerate the components of a difficult airway cart? Outline the American Society of Anesthesiologists' (ASA) algorithm for the management of anticipated difficult airway.
(3+7 = 10 marks)
10. Define *monitored anaesthesia care* (MAC). Discuss in detail the problems anticipated and the plan of action for providing MAC in a 70-year old man with ischaemic heart disease (35% ejection fraction) scheduled for cataract extraction and intraocular lens implantation.
(2+8 = 10 marks)



MANIPAL UNIVERSITY

DIPLOMA IN ANAESTHESIOLOGY (DA) EXAMINATION – APRIL 2012
SUBJECT: PAPER III: ANAESTHESIA IN RELATION TO ASSOCIATED SYSTEMIC DISEASES, INTENSIVE CARE MEDICINE, PAIN MEDICINE

Wednesday, April 04, 2012

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ **Be brief in your answers; padding your answers will not get you any extra credit.**
- ✍ **Illustrate your answer with clearly labeled diagrams where appropriate.**

1. A 65-year old man with benign prostatic hypertrophy has a DDD type of cardiac pacemaker placed in the left infraclavicular region for sick sinus syndrome. Describe the preoperative assessment and intraoperative anaesthetic management of this patient scheduled for transurethral resection of the prostate.
(4+6 = 10 marks)
2. A 40-year old man is brought unresponsive to the emergency room following drowning in freezing water. Explain the basic life support sequence in this scenario.
(10 marks)
3. Classify cardiac output monitors? Explain the principle behind pulse contour analysis technique.
(6+4 = 10 marks)
4. Describe the utility of prothrombin time, activated partial thromboplastin time and thromboelastography in the diagnosis of coagulation disorders.
(4+3+3 = 10 marks)
5. A 55-year old male patient admitted in ICU with features of low blood pressure, altered sensorium and decreased urine output has received early resuscitation directed towards improving haemodynamics. Discuss the other supportive therapy for severe sepsis.
(10 marks)
6. How do you organise and setup a 12-bedded intensive care unit in your hospital.
(10 marks)
7. Discuss the pharmacological methods of providing labour analgesia in a lady who is not willing for labour epidural technique.
(10 marks)
8. Define pain. Enumerate important differences between acute and chronic pain.
(4+6 = 10 marks)
9. What are the risk factors associated with development of postherpetic neuralgia (PHN)? How would you manage a patient with PHN who does not get relieved with pharmacological line of management?
(4+6 = 10 marks)
10. Briefly discuss the indications, routes, efficacy and complications of epidural steroids.
(10 marks)

