

MANIPAL UNIVERSITY

DIPLOMA IN ANAESTHESIOLOGY (DA) EXAMINATION – APRIL 2009

SUBJECT: PAPER I: BASIC SCIENCES AS APPLIED TO ANAESTHESIOLOGY

Wednesday, April 01, 2009

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 role played by the major arteries, arterioles, capillaries and major veins in the maintenance of circulatory function. (10 marks)
2. What is functional residual capacity? How is it affected under anaesthesia with respect to (a) age, (b) type of anaesthesia (c) position of patient (d) site of surgery? (2+8 = 10 marks)
3. Discuss the role of the kidneys in the regulation of acid-base balance. (10 marks)
4. With appropriate examples, describe the meaning of the terms agonist, competitive antagonist, noncompetitive antagonist, mixed agonist-antagonist and inverse agonist. (2×5 = 10 marks)
5. Enumerate the adverse effects of opioids. How can one recognise opioid-induced muscle rigidity and how does it affect various organ systems? Outline the management of opioid-induced muscle rigidity. (3+2+3+2 = 10 marks)
6. Discuss the indications and complications of central venous pressure monitoring in the operation theatre. Draw a labelled diagram of the typical central venous pressure trace, giving the significance of each of the waves depicted. (6+4 = 10 marks)
7. Describe the steps of a mandatory pre-use check-list of the anaesthesia machine. (10 marks)
8. Draw a labelled diagram depicting the formation and termination of the brachial plexus. Describe the relative merits and demerits of the interscalene approach and axillary approach to the brachial plexus. (4+6 = 10 marks)
9. Explain the pattern of autonomic, sensory and motor blockade seen with subarachnoid and epidural anaesthesia. How is the level of motor block evaluated in a person recovering from neuraxial blockade? (6+4 = 10 marks)
10. Describe the indications, technique and complications of penile block. (4+3+3 = 10 marks)



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DIPLOMA IN ANAESTHESIOLOGY (DA) EXAMINATION – APRIL 2009

SUBJECT: PAPER II: CLINICAL ANAESTHESIOLOGY

Thursday, April 02, 2009

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 perioperative management of a 25 year old girl with aortic stenosis of valve size 1.5 cm^2 posted for open reduction and internal fixation of supracondylar fracture of the right humerus.
(10 marks)
2. A 60 year old gentleman, a chronic smoker of 20 beedies/day since the past 40 years, has grade III exertional dyspnoea and a cough productive of white sputum (approximately 30 ml/day). Describe in detail preoperative evaluation and steps of optimisation of this patient scheduled for open cholecystectomy.
(4+6 = 10 marks)
3. Discuss the preoperative evaluation and anaesthetic management of a 40 year old patient with acoustic neuroma posted for excision of the tumour.
(3+7 = 10 marks)
4. Describe the factors predisposing to aspiration of gastric contents. Discuss the various measures used to prevent aspiration of gastric contents in pregnant women undergoing general anaesthesia.
(3+7 = 10 marks)
5. A 10 month old child having cleft palate has been posted for corrective surgery. Discuss the problems that one can encounter at induction of anaesthesia and at extubation. Describe the measures used to prevent and treat these problems.
(5+5 = 10 marks)
6. Discuss the problems associated with laser excision of a vocal cord polyp in a 30 year old lady. Describe how you would deal with airway fire during laser surgery?
(7+3 = 10 marks)
7. Enumerate the various complications that are associated with transurethral resection of prostate. Describe in detail how you will manage a patient who develops symptomatic hyponatraemia with a serum sodium value of 110 mEq/L.
(3+7 = 10 marks)
8. A 66 year old lady has been recently diagnosed to be hypertensive. Her present blood pressure is 186/112 mmHg. She has been started on tablet atenolol 50 mg once daily, tablet amlodipine 5 mg once daily and tablet frusemide 40 mg twice daily. Enumerate the side effects associated with each of these medications. She is scheduled to undergo radical mastectomy. Define the guidelines for accepting her for this surgery. What would be your perioperative goals and concerns if she were to undergo general anaesthesia.
(3+2+5 = 10 marks)
9. Describe briefly the predictors for difficult airway. Enumerate the equipment that a difficult airway cart should contain.
(6+4 = 10 marks)
10. Discuss the causes of arterial desaturation in the postoperative period. Describe the criteria that need to be satisfied before a patient is discharged from the postoperative care unit.
(5+5 = 10 marks)



MANIPAL UNIVERSITY**DIPLOMA IN ANAESTHESIOLOGY (DA) EXAMINATION – APRIL 2009****SUBJECT: PAPER III: REANIMATOLOGY, CRITICAL CARE MEDICINE, MANAGEMENT OF CHRONIC PAIN STATES & ALLIED DISCIPLINES OF ANAESTHESIOLOGY**

Friday, April 03, 2009

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. Explain the physiology of closed chest cardiac compression. What are the alternative techniques of circulatory support during CPR? Explain the merits of each of them.
(4+2+4 = 10 marks)
2. With the help of diagrams, detail the electrocardiographic features of first, second and third degree heart blocks. What are the indications for pacing? Add a note on transcutaneous pacing.
(6+2+2 = 10 marks)
3. A 32-year old male with history of road traffic accident is brought to the trauma centre in a state of unconsciousness and shock. Explain your approach to the management of this polytrauma victim.
(10 marks)
4. Discuss the indications and clinical use of packed red cells, platelet concentrates and fresh frozen plasma.
(4+3+3 = 10 marks)
5. What do you understand by the terms PEEP and CPAP? What are the physiological effects of PEEP? How do you decide the optimal level of PEEP for a given patient?
(2+4+4 = 10 marks)
6. Define the criteria for diagnosing ARDS. Enumerate the causes for development of ARDS. Describe the strategies used for ventilating a patient with ARDS.
(2+2+6 = 10 marks)
7. Discuss the options available for postoperative pain relief of a 4-year old child undergoing orchidopexy under general anaesthesia.
(10 marks)
8. What is patient controlled analgesia (PCA)? What are the factors that contribute to the successful conduct of PCA? What are the problems you come across during this technique and how do you manage them?
(2+4+4 = 10 marks)
9. Describe the WHO analgesic ladder for cancer pain. Discuss the role of psychology in pain management.
(5+5 = 10 marks)
10. Describe the indications, technique and complications of lumbar sympathetic block.
(2+5+3 = 10 marks)

