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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – DECEMBER 2023
PAPER I

Monday, December 04, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer to the point as padding of answers will not fetch extra marks.**

✍ **Illustrate your answer with diagrams where appropriate**

✍ **Long Essays:**

1. With the help of a diagram, describe the structure of the maternal-placental-foetal unit. Describe how this unit is suited for performing its physiological function as the interface between the mother and baby.
(15 marks)

2. With the help of a diagram, describe the anatomy of the coeliac plexus. Describe the indications, technique and complications of coeliac plexus block.
(15 marks)

3. **Write briefly on:**

3A. Illustrate the relationship between the jugular venous pressure (JVP) waveform and the cardiac cycle. Describe the waves seen in the normal JVP trace and draw any two abnormal JVP traces.

3B. Define cardiac output and cardiac index and give their normal values in a healthy 70-kg adult male. Describe the factors that regulate cardiac output.

3C. Discuss the causes and prevention of atelectasis in patients under anaesthesia and in the intensive care unit.

3D. Discuss the causes of hypoxic pulmonary vasoconstriction (HPV) and the effects of anaesthetic and para-anaesthetic agents on HPV.

3E. Classify intravenous anaesthetic agents. Compare and contrast etomidate and propofol with reference to their volume of distribution, metabolism and distribution half life.

3F. Discuss the factors that determine ionisation of drugs. Describe how ionisation of drugs is useful in the context of placental drug transfer as well as action of local anaesthetics.

3G. Describe in detail the use of alpha-2 agonists in anaesthesiology, critical care and pain management.

3H. In the context of neuromuscular blocking drugs, explain the terms *priming principle*, *timing principle*, *taming principle* and *precurarisation*.

- 3I. Define Avogadro's law, Boyle's law, Charles' law, Dalton's law, Gay-Lussac's law, Graham's law and Henry's law.
- 3J. Describe the physical principle of pulse oximetry. Describe any two limitations of pulse oximetry and how they have been overcome in modern pulse oximeters.

(7 marks × 10 = 70 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – DECEMBER 2023
PAPER II

Tuesday, December 05, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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

✍ **Long Essays:**

1. A 62 year old male with Type 2 diabetes mellitus and coronary artery disease is posted for open cholecystectomy. Discuss the preoperative evaluation, optimization and your anaesthetic management of this patient.

(15 marks)

2. Enumerate the anaesthetic considerations in thyroid surgery. Discuss the management of thyroid storm.

(15 marks)

3. **Write short notes on:**

3A. Ankle block

3B. Postoperative pain relief after oromaxillofacial surgery

3C. Malignant hyperpyrexia

3D. Anaesthetic considerations in laser surgery

3E. Postoperative nausea and vomiting

3F. Preoperative considerations specific to geriatric patient

3G. Epidural analgesia for labour

3H. Magnesium therapy in pregnancy induced hypertension and its anaesthetic implications

3I. Neonatal resuscitation

3J. Goldman's risk index

(7 marks × 10 = 70 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION
MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – DECEMBER 2023
PAPER III

Wednesday, December 06, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer to the point as padding of answers will not fetch extra marks.**

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

✍ **Essay Questions:**

1. Anaesthetic evaluation and management of abdominal aortic aneurysm in a 45 year old male patient admitted with history of abdominal pain.

(15 marks)

2. Anaesthetic considerations for elderly patient posted for transurethral resection of prostate (TURP). Add a note on diagnosis and management of TURP syndrome.

(15 marks)

3. **Write short notes on:**

3A. Clinical presentation and management of fat embolism syndrome

3B. Complications of sitting position in neurosurgery

3C. Differential diagnosis and management of malignant hyperthermia

3D. Anesthetic considerations in MRI suite

3E. Preoperative assessment of a patient posted for pneumonectomy

3F. Manifestations and management of perioperative myocardial infarction

3G. Occupational hazards related to anaesthetic practice

3H. Management of anaphylaxis

3I. Management of craniocerebral trauma in ICU

3J. Clinical uses of protamine

(7 marks × 10 = 70 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION

MD (ANAESTHESIOLOGY) DEGREE EXAMINATION – DECEMBER 2023

PAPER IV

Thursday, December 07, 2023

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer to the point as padding of answers will not fetch extra marks

✍ Illustrate your answer with diagrams where appropriate

✍ Long Essay:

1. What are the components of adult chain of survival? Discuss the algorithms for management of cardiac arrest in an adult.

(15 marks)

2. What is trauma triage? Explain briefly how this is done. What is the role of an anaesthesiologist in Trauma Triage area of a referral hospital?

(15 marks)

3. Write short notes on:

3A. Post-cardiac arrest management in the adult intensive care unit

3B. Perioperative blood conservation strategies

3C. Indications and complications of total parenteral nutrition

3D. Cricothyroidotomy

3E. Liquid ventilation

3F. Heat and Moisture Exchanger (HME) filters

3G. Chi-square test

3H. Jugular venous oximetry

3I. Acupuncture

3J. Transcutaneous opioid administration

(7 marks × 10 = 70 marks)

