


<p>Tanta University</p> <p>Faculty of Medicine</p> <p>Anesthesia & SIC Dep.</p> <p>Date: 5 / 4 / 2014</p>	<p>Exam: M.Sc. / Diploma (First part)</p> <p>Physics & Clinical Measurements</p> <p>No. of Questions: 4</p> <p>Times allowed: 3 hours</p> <p>Total marks: 100</p>	
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1. Capnography is a standard basic monitoring in sedation , anesthesia , emergency room and ICU.

- a) Outline the principles of measurement of carbon dioxide in anesthetic breathing system ? (4 marks)
- b) Draw , label , and discuss the normal capnogram. (5 marks)
- c) Draw , label , and discuss abnormal capnogram during anesthesia . (10 marks)
- d) Enumerate the other standard basic anesthesia monitorings ? (2 marks)
- e) What is the clinical significance of progressively rising PaCO₂ values during isoflurane general anesthesia ? (4 marks)

2. Recent anesthesia machine provides us the facility of using a low flow anesthesia .

- a) What is meant by a low flow anesthesia ? (5 marks)
- b) Describe low flow anesthesia by the circle system ? (5 marks)
- c) Discuss the advantages and disadvantages of the circle system ? (7 marks)
- d) What safeguards would you require during low flow by the circle system ? (5 marks)
- e) Enumerate and explain contraindications of low flow anesthesia ? (3 marks)

3. Perioperative hypothermia is a preventable morbidity .

a) what are the methods of measuring temperature ? (5 marks)

b) What techniques are used to measure temperature in anesthesia and how do they work ? (5 marks)

c) Why does core temperature drop under anesthesia ? (5 marks)

d) How may this prevented ? (5 marks)

e) How can you prevent perioperative hypothermia ? (5 marks)

4. Ultrasound plays an important role in modern anesthesia and critical care practice .

a) Discuss the physics of ultrasound , how is it generated , what is the frequency used ? (6 marks)

b) How does the system know the depth of the reflection ? (5 marks)


c) What is piezoelectric effect ? (3 marks)

d) What is the Doppler effect ? How is Doppler principle used in clinical ultrasound ? (5 marks)

e) Describe some uses of ultrasound in anesthesia and ICU settings ? (6 marks)

Good Luck

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<p>Tanta University</p> <p>Faculty of Medicine</p> <p>Anesthesia & SIC Dep.</p> <p>Date: 9 / 4 / 2014</p>	<p>Exam: M.Sc. / Diploma</p> <p>First Part (<u>Pharmacology</u>)</p> <p>No. of Questions: 3</p> <p>Times allowed: 1 hour / 3 hours (Total)</p> <p>Total marks: 50</p>	
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1. Compare and contrast the pharmacology of isoflurane and sevoflurane . (15 marks)


2. a) Classify , giving examples and mode of action of antiarrhythmic drugs (10 marks)

b) What are the main differences between verapamil and nifedipine , considering drug interaction with inhalation anesthetics ? (10 marks)

3. Discuss the characteristic features of an ideal muscle relaxant ? (15 marks)

Good Luck

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<p>Tanta University Faculty of Medicine Anesthesia Dep. Date:</p>	<p>Exam: M.Sc / Diploma Second Part (Paper 1) No. of Questions: 3 Times allowed: 3 hours Total marks: 50</p>	
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1. A 32-yr-old primigravida at 36 weeks gestationa , known to have multiple sclerosis (MS) . She is scheduled for elective cesarean section .

- a) What preoperative information is important for this patient ? (3 marks)
- b) How would you prepare her ? (2 marks)
- b) Describe and justify your recommended anesthesia technique for her . (7 marks)
- c) What are the major postoperative concerns in her setting ? (3 marks)

2. A 5-yr-old child with history of bronchial asthma is scheduled for adeno-tonsillectomy. His mother is worried that he may has common clod .


- a) How would you assess him ? (3 marks)
- b) How would you counsel him and his mother ? (2 maks)
- c) What premedication would you recommend for him ? (1 marks)
- d) Describe and justify your anesthesia technique for him ? (3 marks)
- e) What are the causes , differential diagnosis and treatment of bronchospasm under anesthesia ? (6 marks)

3. A 46-yr-old lady presents to surgical intensive care unit (SICU) with fever, dyspnea, and cloudy sensorium 5 days post colectomy surgery. Clinical examination shows; body weight is 72 kg, height is 1.68 m, pulse is 122 bpm, blood pressure is 80/30 mmHg , temperature is 38.6°C , respiratory rate is 28 / min , SpO₂ is 72% , and urine output is < 30 ml / hour for 3 consecutive hours . Blood chemistry reveals; WBC is 16000 / mm³ , Hb is 9 g / dl ,

platelets is 90000 / mm³ , Na⁺ is 136 mmol/L , K⁺ is 7.5 mmol/L , Cl⁻ is 92 mmol /L , lactate is 8 mmol / L , glucose is 10 mmol / L , ND CREATININ IS 2.5 mg / dl .

- a) What is the first therapeutic step in the management of this patient ? (2 marks)
- b) What is the differential diagnosis of this clinical condition ? (2 marks)
- c) Classify ABGs and acid-base status of her ? (2 marks)
- d) What further investigations would you recommend to verify diagnosis ? (4 marks)
- e) How would you resuscitate her ? (10 marks)

Good Luck

Tanta University	Exam: M.Sc / Diploma	
Faculty of Medicine	Second part (Paper 2)	
Anesthesia & SIC Dep.	No. of Questions: 3	
Date: 9 / 4 / 2014	Times allowed: 3 hours	
	Total marks: 50	

1. A 26-yr-old man reports that he heard everything during the procedure, during general anesthesia for an emergency exploration after road traffic accident .

- a) How would you proceed ? (2 marks)
- b) What is the difference between implicit & explicit awareness ? (2 marks)
- c) Enumerate patient groups at high risk of awareness ? (3 marks)
- d) How would you prevent awareness ? (3 marks)
- e) Explain the combination of minimal alveolar concentration (MAC) < 0.7 , BIS < 45% , and mean arterial blood pressure < 70 mmHg . (5 marks)

2. A 26-yr-old soldier presents for above knee amputation. He is worried about possibility of development of chronic pain .

- a) How would you counsel him ? (2 marks)
- b) What are the different types of pain that may he develop ? (3 marks)
- c) Discuss the different modalities for treatment of his acute postoperative pain ? (6 mark)
- d) What do you recommend to prevent development of phantom limb syndrome? (4 marks)

3. Give an account on the following :

a) Malnutrition in critically ill surgical patients ; causes , assessment and its impact on outcomes . (5 marks)

b) Postdural puncture headache ; diagnosis and treatment. (5 marks)

c) Role of the anesthetist in infection control in operating room, in ICU and in pain medicine . (5 marks)

d) Risk factors of venous thromboembolism in surgical patients . (5 marks)

Good Luck

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