



THE HONG KONG COLLEGE OF ANAESTHESIOLOGISTS

FINAL FELLOWSHIP EXAMINATION (INTENSIVE CARE) SHORT ANSWER PAPER

15 Questions

Monday 26 July 2021 (9:00 am - 11:30 am)

NOTICE

- (A) Write your answers to the 15 questions in separate books.
- (B) It is not necessary to rewrite the question in your answer book.
- (C) You should answer each question in ten minutes or less.
- (D) The questions are worth equal marks.
- (E) Record your number on the cover of each book and hand in all books.
- (F) Use ink or ball-point pen

Question 1

Briefly outline the management of extrahepatic organ failure in patients with acute liver failure. (10 marks)

Question 2

What are the complications of percutaneous tracheostomy? Suggest possible ways of prevention of these complications. (10 marks)

Question 3

A morbid obese patient with a body mass index of 30 is admitted to your Intensive Care Unit (ICU) after receiving gastric bypass surgery. He was kept intubated and mechanically ventilated postoperatively. His past medical history includes type II diabetes mellitus, hypertension and obstructive sleep apnoea syndrome which required nocturnal CPAP. Please outline the potential challenges and your plan of management for the next 48 hours. (10 marks)

Question 4

- i) Describe the pharmacological actions of vasopressin. (3 marks)
- ii) Critically evaluate the use of vasopressin in septic shock. (7 marks)

Question 5

A patient with the following blood result was admitted to your ICU. You are asked to prescribe continuous renal replacement therapy for him.

Na	110	mmol/L
K	10	mmol/L
Ur	80	mmol/L
Cr	2000	umol/L
pH	6.95	
pO ₂	10.0	kPa
pCO ₂	2.8	kPa
HCO ₃	6	mmol/L
Lactate	14	mmol/L

Please state:

- i) The considerations and potential complications **related to** the renal replacement therapy (4 marks)
- ii) How would you modify your usual renal replacement prescription to minimize the above complications (4 marks)
- iii) Apart from the modification of renal replacement prescription, what other measures would you implement to minimize the complications (2 marks)

Question 6

- i) Define delirium (1 mark)
- ii) List risk factors for delirium (2 marks)
- iii) Describe steps you would take to manage delirium in your ICU. (7 marks)

Question 7

You are the consultant in charge of a 20 bed mixed surgical and medical closed ICU in a tertiary hospital. The mortality and morbidity of the central line associated bloodstream infections (CLABSI) was observed to have increased by 5% as compared to last year. You are contemplating to implement a Quality Assurance project to address this issue.

- i) What is Quality Assurance (1 mark) and why is it important? (1 mark)
- ii) List 4 parameters that you are going to measure. (2 marks)
- iii) Please outline how you would implement this project. (6 marks)

Question 8

A 25-year-old man with severe eczema, but otherwise good past health, was admitted to your ICU from Emergency department because of fever and severe pulmonary oedema. He was intubated and put on mechanical ventilation. On clinical examination he had cool peripheries and grossly elevated jugular venous pressure. You heard a loud pan-systolic murmur at 5th intercostal space at the mid-clavicular line. No murmur was heard in dermatology clinic follow-up last month.

- i) What is the most likely diagnosis (1.5 marks) and why (2 marks)?
- ii) To support your diagnosis,
 - a) What key investigation results will you look for? (2.5 marks)
 - b) List four other clinical signs you will look for. (2 marks)
- iii) What antibiotics will you choose? (1 mark)
- iv) His condition further deteriorated with increasing shock and pulmonary oedema despite maximal medical therapy and appropriate mechanical ventilatory settings, what other treatment options will you consider? (1 mark)

Question 9

A 68-year old man with history of IgA nephropathy was admitted to ICU one week ago for pneumonia. He develops watery diarrhea and Clostridium Difficile (CD) colitis is suspected.

- i) List 4 risk factors for CD colitis. (2 marks)
- ii) Outline the infection control measures and preventive measures. (4 marks)
- iii) Outline the approach to treatment of severe CD colitis. (4marks)

Question 10

- i) Outline and briefly describe the different mechanisms by which a mechanical ventilator may detect a spontaneous inspiratory effort. Include the advantages and potential disadvantages of each mechanism. (6 marks)
- ii) List 2 potential causes for auto-triggering during pressure support ventilation and associated problems. (4 marks)

Question 11

- i) Define post partum haemorrhage. (1 mark)
- ii) Outline the hemostatic strategy in postpartum haemorrhage. (9 marks)

Question 12

- i) What are the clinical features of lithium toxicity? (4 marks)
- ii) Outline the management of a patient with acute lithium overdose. (6 marks)

Question 13

A middle aged woman with long history of rheumatoid arthritis is now admitted to your ICU because of severe pneumonia. Describe the factors to be considered in providing ventilatory support and managing this patient. (10 marks)

Question 14

A man suffered from fire related inhalational injury. Outline your assessment (3 marks) and management strategies (7 marks).

Question 15

A new influenza rapid test is used to screen patients with pneumonia who are admitted to the ICU. The sensitivity and specificity of the test are 80% and 60% respectively. The prevalence of influenza infection in those patients with pneumonia requiring ICU care in winter is 90% while the prevalence of influenza infection in such patients in summer is only 20%.

- i) Calculate the post test probability for this test in winter and summer. You may use the following formula in your calculations. (8 marks)

Pretest odds = (Pretest probability/ (1-Pretest probability))

Posttest odds = Pretest odds x Positive Likelihood Ratio

Positive Likelihood Ratio = Sensitivity / (1-Specificity)

Posttest probability = Posttest odds/ (Posttest odds +1)

- ii) Is there any difference in the decision of initiating antiviral therapy based on the rapid test result in winter and summer? (2 marks)

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