



## The Hong Kong College of Anaesthesiologists

### Final Fellowship Examinations

#### Paper II – Investigations (1-6)

11 March 2019 (Monday)

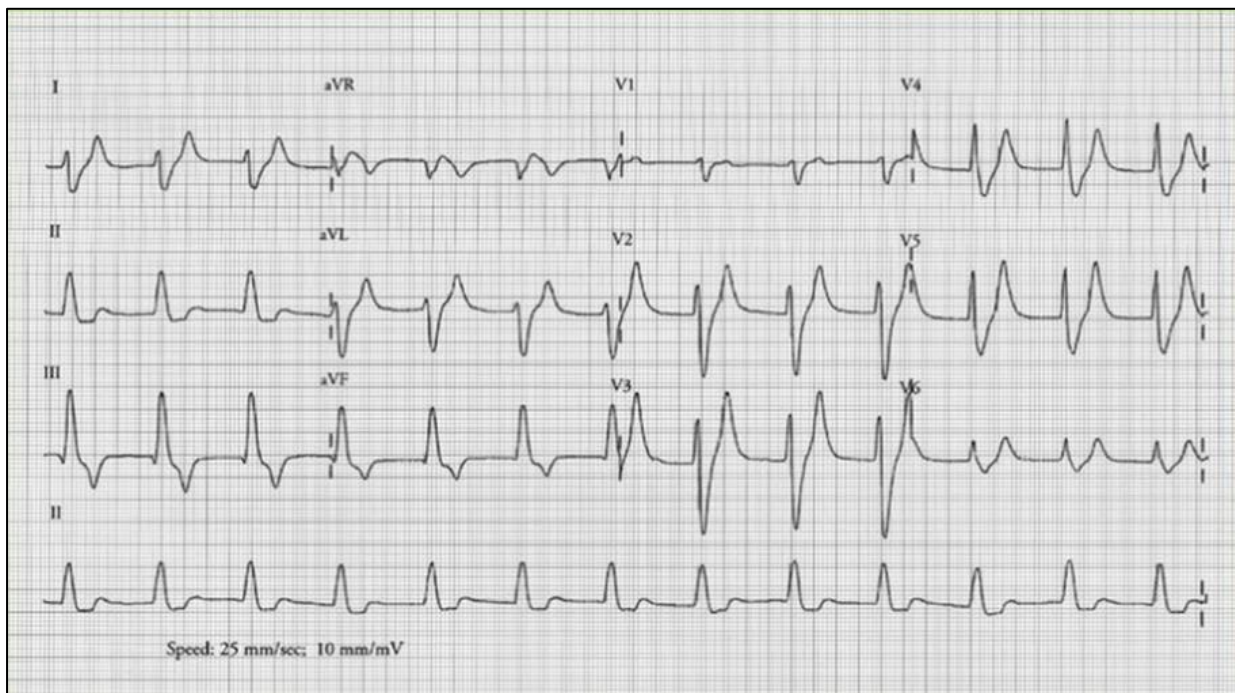
12:25 – 12:35 hours

#### Instructions:

- This is a question-answer book. Please write your answers in the space provided.
- Write your candidate number on every page of the answer book.
- Use ink or ball-point pen.
- There are 6 questions in this paper, each with multiple parts.
- Answer **ALL** questions. They are worth equal marks.
- For questions with multiple parts, allocation of marks is indicated in the brackets.

#### Question 1

A 24-year-old runner collapsed after a full marathon (42.5 km), the ECG below was recorded in the emergency department during initial assessment.



a. Describe THREE abnormalities in this ECG. (1.5 marks)

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(3) \_\_\_\_\_



**b. What is the most likely diagnosis and mechanism? (1 mark)**

\_\_\_\_\_

**c. Suggest TWO further laboratory tests you would order to confirm your diagnosis. (1 mark)**

(1) \_\_\_\_\_

(2) \_\_\_\_\_

**d. List THREE initial treatments. (1.5 marks)**

(1) \_\_\_\_\_

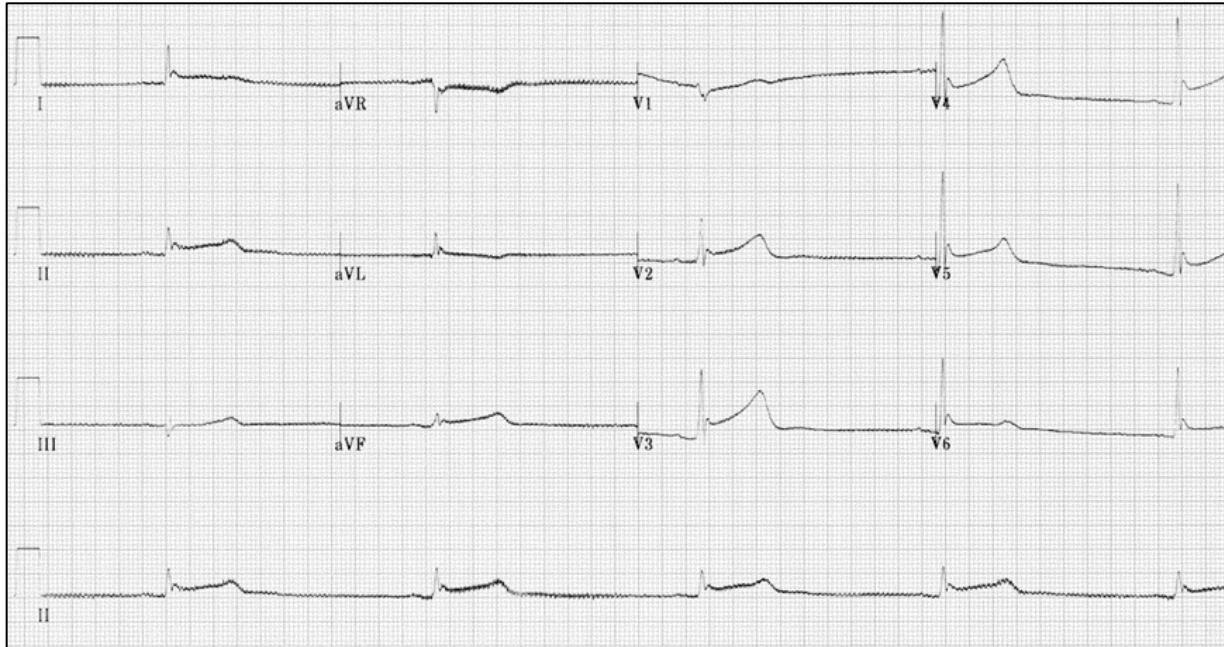
(2) \_\_\_\_\_

(3) \_\_\_\_\_



**Question 2**

An 80-year-old gentleman slipped and fell after having a shower and suffered a fractured hip. He was found 10 hours later by his relatives. On arrival at the emergency department, his conscious state was obtunded and his blood pressure was 90/50 mmHg. Below was the ECG taken at the time:



a. Describe THREE abnormalities in this ECG. (1.5 marks)

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(3) \_\_\_\_\_

b. Suggest ONE diagnosis. (1 mark)

\_\_\_\_\_

c. Suggest FIVE initial management. (2.5 marks)

(1) \_\_\_\_\_

(2) \_\_\_\_\_



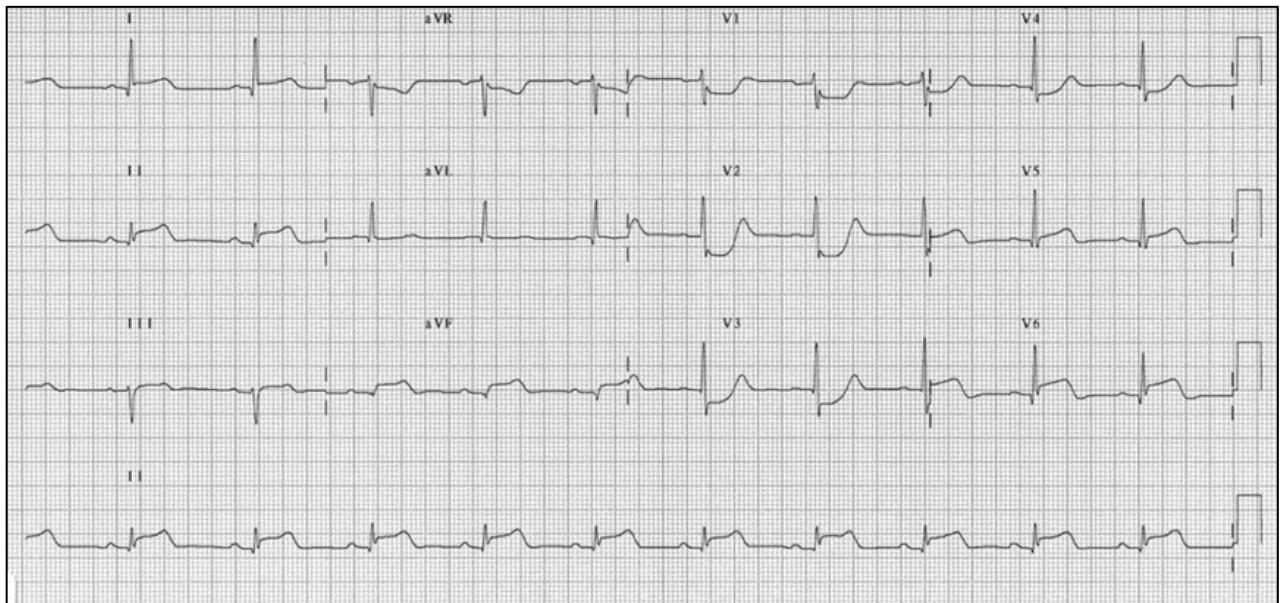
(3) \_\_\_\_\_

(4) \_\_\_\_\_

(5) \_\_\_\_\_

### **Question 3**

**A 52-year-old obese lady presented to A&E with sudden onset of severe central chest pain associated with dyspnoea and left shoulder numbness. This is her ECG:**



**a. Describe the abnormalities in this ECG. (1 mark)**

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**b. What is the specific diagnosis? (2 marks)**

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**c. Suggest FOUR initial management. (2 marks)**

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(3) \_\_\_\_\_

(4) \_\_\_\_\_

#### **Question 4**

**A 49-year-old man was rescued from a household fire, he was unconscious on arrival at the hospital with minor superficial burns to both hands. His arterial blood gas was as follows:**

Barometric Pressure	760 mmHg
Fraction of O <sub>2</sub> Inspired	1.0
Hemoglobin	15 g/dL
O <sub>2</sub> Saturation	99%
pH	7.27
PO <sub>2</sub>	660 mmHg (87.9 kPa)
PCO <sub>2</sub>	30 mmHg (3.9 kPa)
Bicarbonate	13.6 mmol/L
Base Excess	-13.7 mmol/L

**a. Calculate the Alveolar-to-arterial oxygen gradient. (1 mark)**

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**b. Describe the acid-base status. (1 mark)**

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**c. What is the diagnosis? (1 mark)**

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**d. What laboratory test would you order to confirm this? (1 mark)**

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**e. What other investigations would you do to diagnose the acid-base abnormalities? (1 mark)**

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### **Question 5**

**A 65-year-old man is admitted to the Intensive Care Unit with acute confusion. Clinically he is euvolemic:**

<b>Venous blood</b>			
Sodium	110 mmol/L	Creatinine	67 $\mu$ mol/L
Potassium	4 mmol/L	Calcium	1.92 mmol/L
Chloride	81 mmol/L	Glucose	5 mmol/L
Urea	3 mmol/L	Bicarbonate	24 mmol/L
<b>Urine</b>			
Sodium	42 mmol/L	Osmolarity	540 mmol/L

**a. What is the calculated serum osmolarity? (1 mark)**

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**b. Suggest TWO possible diagnoses. (2 marks)**

(1) \_\_\_\_\_

(2) \_\_\_\_\_

**c. Suggest FOUR investigations and/or treatments for this condition. (2 marks)**

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(3) \_\_\_\_\_

(4) \_\_\_\_\_

### **Question 6**

**11-year-old girl is scheduled for scoliosis correction operation. She has a known history of asthma. This is her lung function test before the operation.**

	<b>Predicted</b>	<b>Observed</b>
<b>FEV<sub>1</sub> (L)</b>	2.60	1.91
<b>FVC (L)</b>	3.10	2.54
<b>FEV<sub>1</sub>/FVC (%)</b>	83.8	74.8
<b>TLC (L)</b>	4.2	2.09
<b>PEFR (L/min)</b>	390	200

**a. Describe the pattern of abnormalities. (1 mark)**

\_\_\_\_\_



Candidate no. \_\_\_\_\_

- b. What would be the expected diffusion capacity of the lungs for carbon monoxide ( $DL_{CO}$ ) in this patient? (1 mark)

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- c. List your management plans for the chest condition before, during and after surgery (3 marks)

Before: \_\_\_\_\_

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During: \_\_\_\_\_

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After: \_\_\_\_\_

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----- End of Paper -----