



## The Hong Kong College of Anaesthesiologists

### Final Fellowship Examinations

#### Paper II – Investigations (1-5)

9 September 2019 (Monday)

12:20 – 12:30 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 5 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 35-year-old man presents with repeated vomiting. Below are the results of his blood tests.

Sodium	130 mmol/L	FiO <sub>2</sub>	0.3
Potassium	2.5 mmol/L	pH	7.53
Chloride	81 mmol/L	pO <sub>2</sub>	112 mmHg
Urea	12 mmol/L	pCO <sub>2</sub>	51 mmHg
Creatinine	137 µmol/L	HCO <sub>3</sub>	42 mmol/L

1a. What are the abnormalities? (2 marks)

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1b. Name one possible cause. (1 mark)

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1c. What will be your initial management? Explain your answer. (2 marks)

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**Question 2**

A 32-year-old lady has just undergone general anaesthesia for emergency Caesarean section at 36-week gestation for preeclampsia. Below are the results of her blood gas on arrival in the recovery room.

FiO <sub>2</sub>	0.4
pH	7.32
pCO <sub>2</sub>	40mmHg
pO <sub>2</sub>	110mmHg
HCO <sub>3</sub>	20mmol/L
BE	-2

2a. Describe her acid-base status and explain your answer. (2 marks)

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2b. Calculate the A-a gradient. What are the possible explanations? (3 marks)

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**Question 3**

A 54-year-old man is admitted to intensive care following coronary artery bypass grafting (CABG). He has significant ongoing postoperative bleeding, below are the results of his blood tests.

<b>INR</b>	<b>1.1</b>
<b>APTT</b>	<b>55 seconds</b>
<b>Platelet count</b>	<b>49x 10<sup>9</sup>/L</b>

3a. What are the abnormalities and the possible causes? (2 marks)

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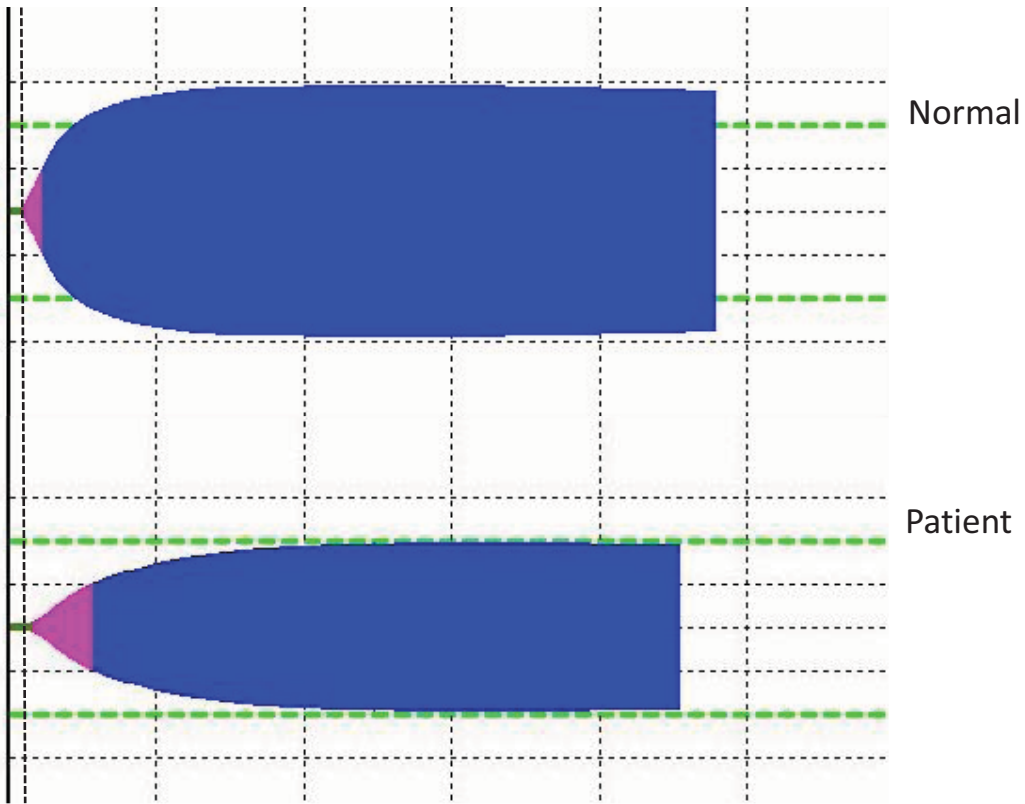
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3b. What will be your treatment? (1 mark)

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3c. Below is the thromboelastogram (TEG) performed after your treatment. Describe the abnormalities and explain. (2 marks)



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**Question 4**

Below is the echocardiogram report of a 72-year-old lady.

<p><b>M-mode</b></p> <p><b><u>Left ventricle</u></b>            Diastolic dimension            5 cm            Systolic dimension                3 cm            Septal thickness                    0.9 cm            Posterior wall thickness        1 cm</p> <p><b><u>Aorta</u></b>            Root dimension                    2.9 cm</p> <p><b><u>Left atrium</u></b>            Dimension                            4.8 cm</p>	<p><b>Doppler</b></p> <p><b><u>Aortic valve</u></b>            Peak pressure gradient        9 mmHg            AR                                        Nil</p> <p><b><u>Mitral valve</u></b>            Peak pressure gradient        9.7 mmHg            MV area (by PHT)                0.8 cm<sup>2</sup>            MR                                        Mild to moderate</p> <p><b><u>Tricuspid valve</u></b>            Peak pressure gradient        39 mmHg            RVSP                                    49 mmHg            TR                                        Mild to moderate</p>
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4a. Based on the echocardiogram report, what is the calculated value for left ventricular fractional shortening? (1 mark)

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4b. What are the abnormal findings? (4 marks)

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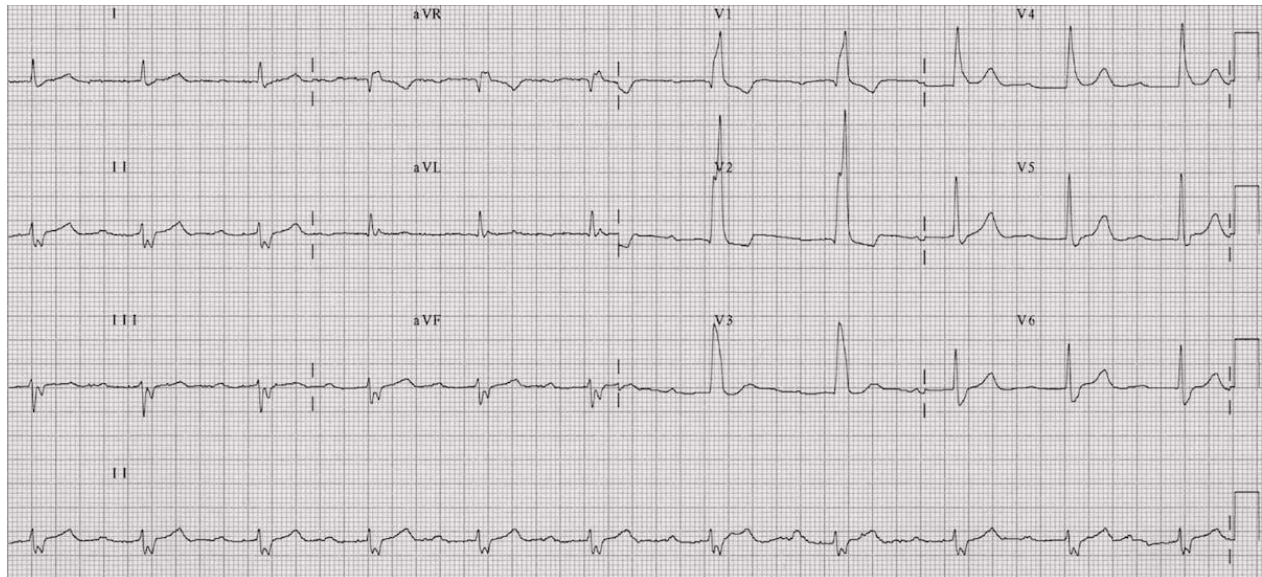
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**Question 5**

**A 56-year-old gentleman scheduled for laparoscopic appendectomy for acute appendicitis. Below is his preoperative ECG.**



5a. What are the abnormal findings as showed on his preoperative ECG? (2 marks)

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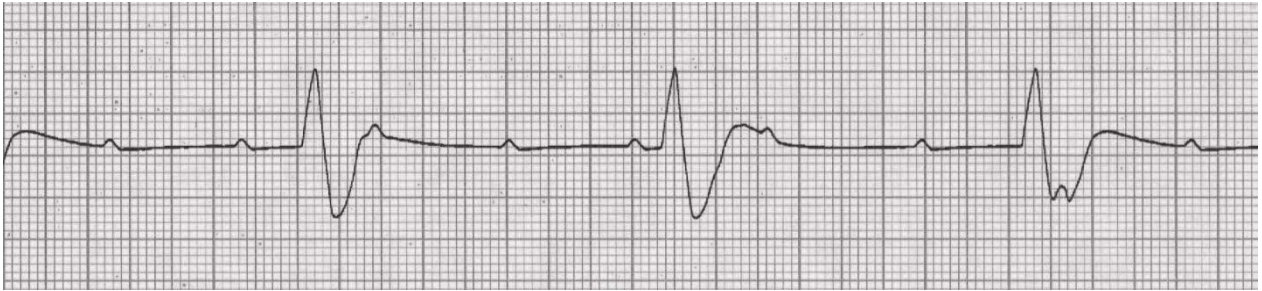
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5b. What are the important causes to consider? List two. (1 mark)

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5c. Following induction of general anaesthesia he becomes hypotensive. Below is the ECG printout from the monitor. What is the diagnosis and what will be your management? (2 marks)



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