

HKCA Final Fellowship Examination

Written Paper II - 5 March 2018

Investigation Question Book

Instructions to Candidates:

Total 6 questions.

Each question carrying equal marks.

Answer all questions.

Write your answers in the Answer Book provided.

Question 1

You are called to assess a 70-year-old male patient with problem in breathing. His medical background includes ischemic heart disease, chronic kidney disease and diabetes mellitus. An arterial blood gas is taken and the result is as below:

Parameter	Patient Value	Reference Range	
pH	7.2	7.35-7.45	
pCO ₂	8	4.5-6	kPa
pO ₂	9.6	10.5-14	kPa
HCO ₃	18	22-26	mmol/L
BE	-8	+/- 2	
Na	130	135-145	mmol/L
Cl	102	95-105	mmol/L
K	4	3.5-5	mmol/L
FiO ₂	60 %	-	

- a) Describe the abnormalities including calculation of anion gap. (2 marks)**
- b) If serum albumin is 18g/L, what is the corrected anion gap? (2 marks)**
- c) Suggest one clinical condition that can explain his blood gas result. (1 mark)**

Question 2

Below is the complete blood count report for a 62-year-old male patient.

Parameter	Measured	Reference range
WBC	6.8	3.7- 9.2 $\times 10^9/L$
RBC	4.79	4.30-5.90 $\times 10^{12}/L$
HGB	11.5	13.4 – 17.1 g/dL
HCT	0.344	0.400 – 0.510 L/L
MCV (Mean corpuscular volume)	71.8	82.0 – 97.0 fL
MCH (Mean corpuscular hemoglobin)	24	27.0 – 33.0 pg
MCHC (Mean corpuscular hemoglobin concentration)	33.4	32.0 – 35.0 g/dL
RDW	14.7	11.0 – 14.0 %
Platelet	161	145 – 370 $\times 10^9/L$

a) Describe the abnormalities. (1.5 marks)

b) What does RDW measure? What does the RDW value in this patient reflect? (2 marks)

c) Give THREE possible causes. (1.5 marks)

Question 3

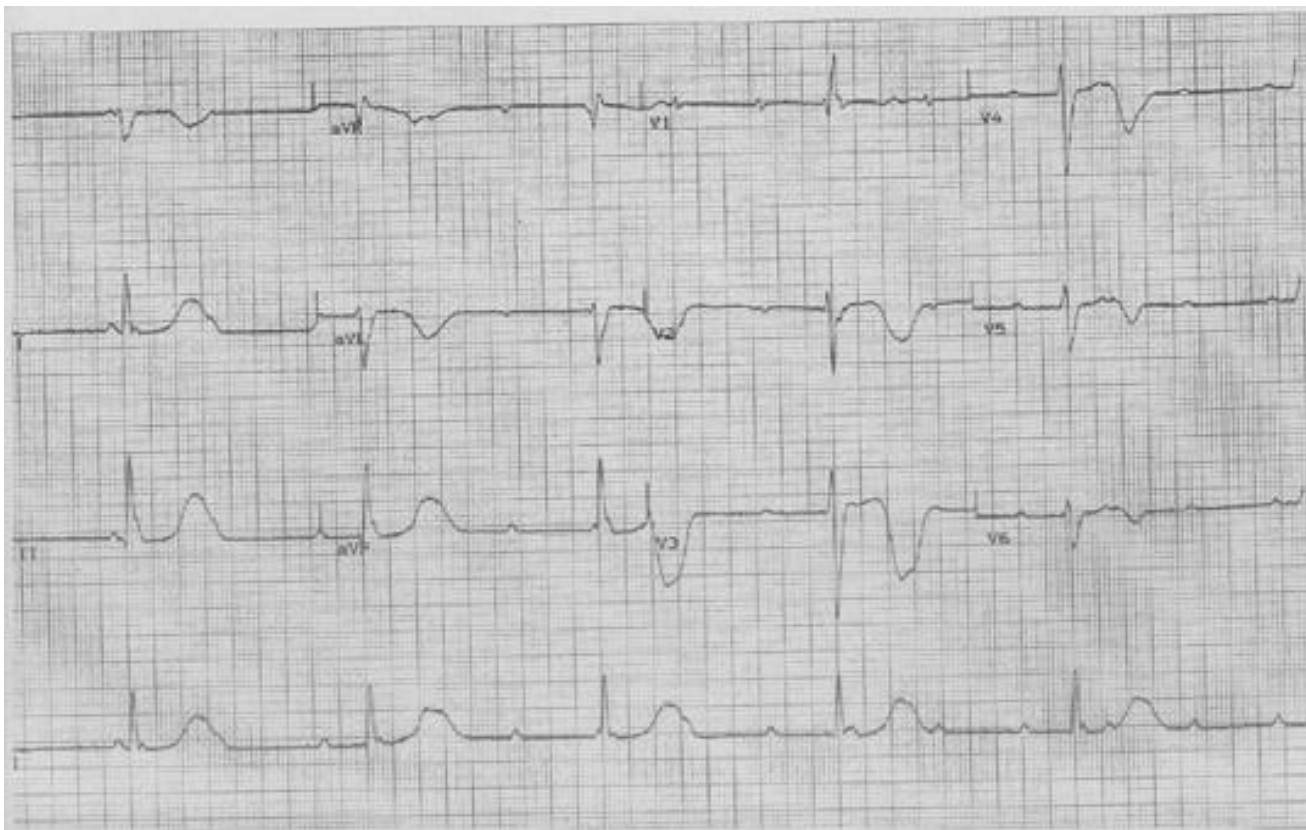
A previously healthy 14-year-old-boy presents with diarrhea and vomiting. He is complaining of non-specific abdominal pain. Below is his venous blood gas result:

Parameter	Patient Value	Reference Range
pH	7.12	7.35 – 7.45
pO ₂	11.5	10 - 14 kPa
pCO ₂	3.2	4.5 - 6.0 kPa
HCO ₃	9	22 - 26 mmol/L
BE	-17	+/- 2
Lactate	4.0	0.5-2.2 mmol/L
K	5.5	3.5-4.5 mmol/L
Na	134	135-145 mmol/L
Spot glucose	22	mmol/L

- a) What is the most likely diagnosis? Explain your answer. (2 marks)**
- b) What further laboratory test should be ordered to confirm your diagnosis? (1 mark)**
- c) Name THREE main components of initial management. (2 marks)**

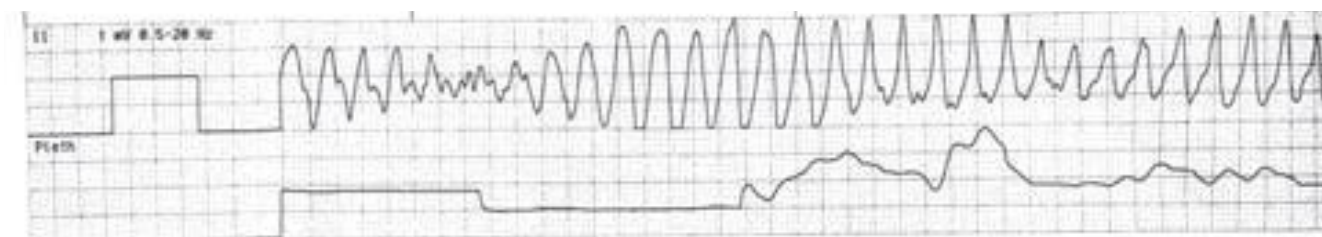
Question 4

A 70-year-old lady who enjoys good past health is admitted for dizziness. Below is her ECG on admission:



a) Describe the ECG abnormalities. (2 marks)

30 minutes later she develops syncope. Below is her cardiac monitoring strip.



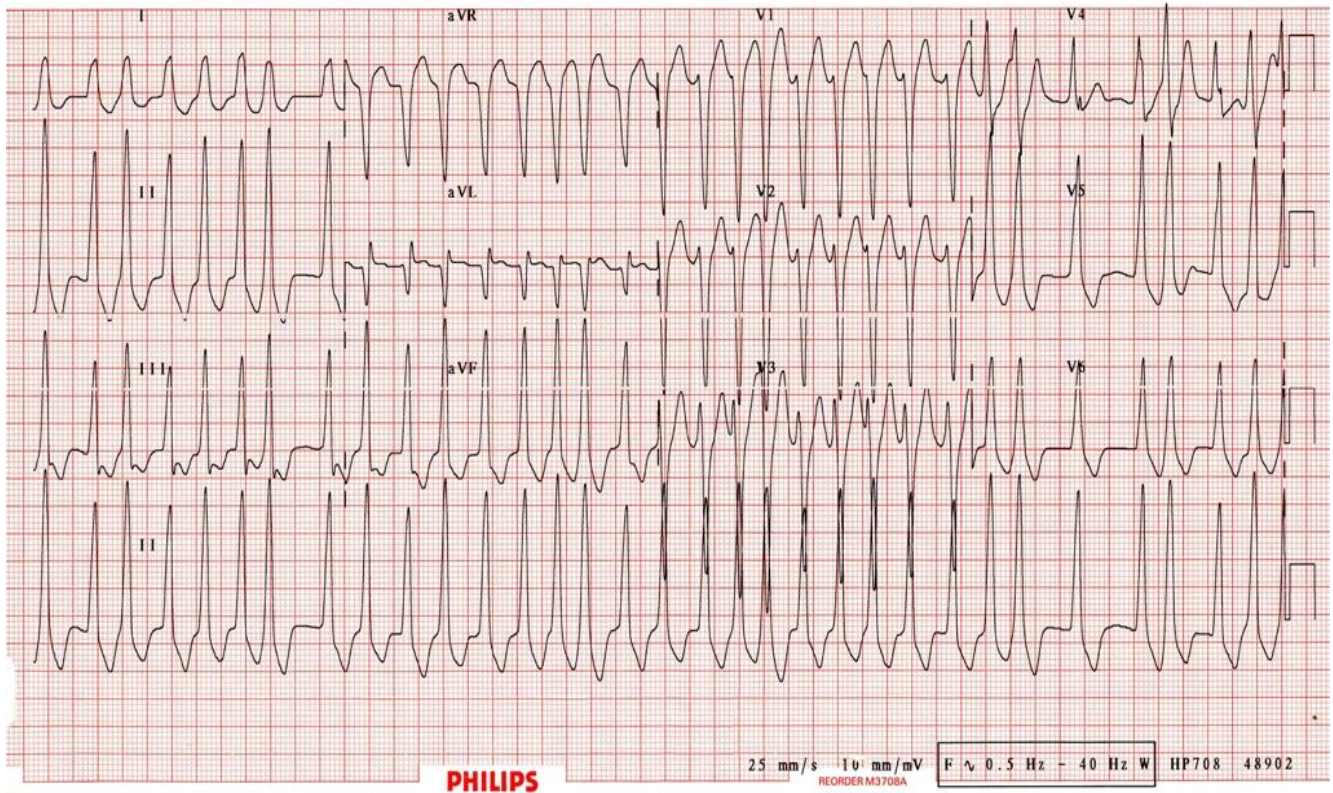
(Note: upper tracing: lead II ECG; lower tracing: SpO2)

b) What is the diagnosis? (1 mark)

c) How you would manage this patient? (2 marks)

Question 5

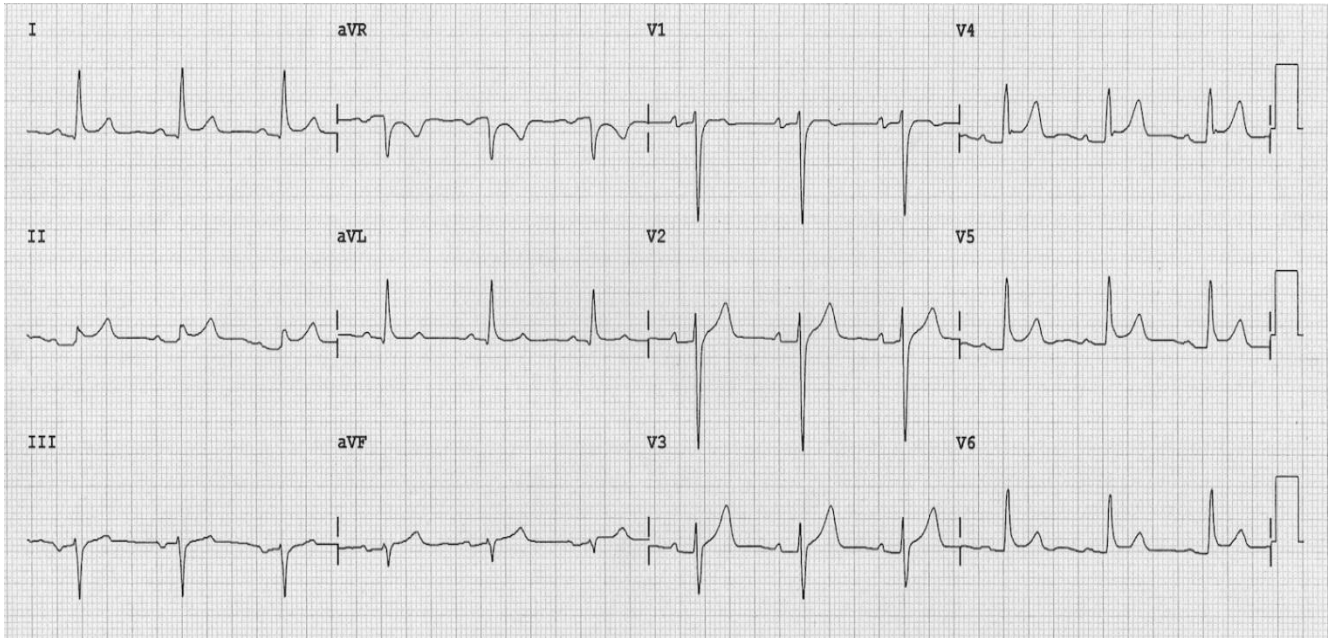
A 56-year-old gentleman is admitted for palpitation and dyspnoea. His blood pressure is 79/45mmHg, SpO2 is 93% and his is on oxygen 10L/min via non-rebreathing mask. Below is his ECG:



- Describe the abnormalities. (2 marks)**
- What are the TWO possible diagnosis that can give rise to the above ECG changes? (2 marks)**
- What immediate treatment should be given? (1 mark)**

Question 6

A 29-year-old female presents with central chest pain. She has history of recent flu-like illness, otherwise she has no significant past medical problem. Below is her ECG:



- Describe the ECG abnormalities. What is the diagnosis? (2 marks)**
- What are the TWO possible causes that can give rise to the above ECG changes? (1 mark)**
- What further investigations you would order? (2 marks).**

END