Master copy

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

Selection Examination for Enrolment to the in-service Training Programme in Postgraduate Certificate in Basic Laboratory Sciences leading to the Postgraduate Diploma in Histopathology, Clinical Haematology and Chemical Pathology – September 2017

Date:- 29th September 2017 **Time:-** 1.00 p.m. – 3.00 p.m.

ESSAY PAPER

Answer all questions.
Answer each question in a separate book.
All questions carry equal marks.

PART A
ANATOMICAL PATHOLOGY (GENERAL & SYSTEMIC)

1.

1.1.

1.1.1. List one (01) premalignant lesion each in the oral cavity, oesophagus and stomach. (15 marks)

1.1.2. Describe the aetiopathogenesis of each of the three lesions you mentioned in 1.1.1. (20 marks)

1.2. A 59-year-old chronic smoker presents with a bronchial carcinoma.

1.2.1. Describe the systemic effects of this tumour on the host, giving examples. (30 marks)

1.2.2. List the different types of samples that could be sent to the histopathology laboratory for the diagnosis of bronchial carcinoma. (15 marks)

1.3. Name the groups of genes involved in carcinogenesis, giving two (02) examples under each category. (20 marks)

Contd...../2-

2.

2.1.

2.1.1. List the causes of aortic aneurysms. Outline the pathogenesis for each cause. (25 marks)

2.1.2. Describe the complications of aortic aneurysm. (25 marks)

2.2. Describe the pathological changes (macroscopy and microscopy) in the kidney of a patient with long standing diabetes mellitus. (50 marks)

PART B
HAEMATOLOGY

3.

3.1. A 60-year-old man presented to the General Practitioner with shortness of breath on exertion. He appeared pale on examination. A full blood count (FBC) was done. Results are given below.

Hb	5.5 g/dL	(13.5 – 16.5)
HCT	17.0%	(40 – 52)
MCV	96 fL	(80 – 95)
MCH	27 pg	(27 – 32)
MCHC	30 g/dL	(30 – 35)
WBC	2.5 x10^9/L N - 20%, L - 65%, E - 15%	
Platelets	50 x 10^9/L	

3.1.1. Comment on the full blood count report. (05 marks)

3.1.2. List ten (10) possible causes for the above FBC findings. (10 marks)

3.1.3. Outline the information you would obtain in the history, relevant to the causes listed in 3.1.2. (25 marks)

3.1.4. List five (05) haematological investigations you would do in the diagnostic workup of this patient. (10 marks)

Contd...../3-

3.2. This patient was admitted for a blood transfusion. He developed fever, chills, back pain and pain along the transfusion line within 15 minutes of starting a unit of packed red blood cells.

3.2.1. Mention the most likely cause for these symptoms. (10 marks)

3.2.2. Outline the important steps you would take in the investigation and management of this patient. (25 marks)

3.3. His coagulation profile is given below:

Prothrombin Time (PT)	24 sec.	(11 – 14)
Activated Partial Thromboplastin Time (APTT)	62 sec	(28 – 40)

3.3.1. Mention the most likely cause for the above results. (05 marks)

3.3.2. What further investigations would you do to confirm your diagnosis? State the expected findings of each investigation. (10 marks)

PART C
CHEMICAL PATHOLOGY

4.

4.1. A 45 year-old woman presents with itching and yellow discolouration of eyes. Her total bilirubin is 254 μmol/L (<20)

Name other biochemical investigations you would perform in this patient, mentioning the expected results? (30 marks)

4.2. A 60-year-old man presented with excessive thirst and increased frequency of micturition. There was no history of dysuria or urgency and he had a normal urinary flow with no hesitancy. He was previously healthy and not on any drugs. Simple clinical examination revealed no abnormality.

4.2.1. List possible causes for the above clinical presentation. Discuss the biochemical investigations that you would perform to arrive at a diagnosis. (30 marks)

Contd...../4-

4.2.2. A 19 year-old boy with a history of nausea and abdominal pain of two weeks duration presented to a General Practitioner. On examination, there was increased skin pigmentation.

(a) What is the probable diagnosis? (05 marks)

(b) Name a single test you would request on this patient, to arrive at a diagnosis for his immediate management. (05 marks)

4.2.3. A 25 year-old woman, P_2C_1 with a period of amenorrhoea of 20 weeks had the following investigation findings.

Urine tests done by dipstick method

Glucose	positive	
Protein	Nil	
Fasting plasma glucose	5.2 mmol/L	(<5.6)
HbA_1c	5.3%	(< 5.5)

What is the most likely diagnosis? (05 marks)

4.2.4. The following investigations were obtained from a 40 year-old man who presented with generalized aches and pains of three days duration.

Serum

Sodium	140	mmol/L	(135 – 145)
Potassium	3.8	mmol/L	(3.5 – 4.0)
Urea	6	mmol/L	(3 – 7)
Creatinine	86	µmol/L	(60 – 120)
Total cholesterol	6.9	mmol/L	(<5.2)
Creatine kinase	573	IU/L	(50 – 325)

Mention one (01) further investigation you would request to arrive at a diagnosis. (05 marks)

4.3. Briefly mention the instructions you would give to the patient/ward staff, in collecting samples for the following investigations.

4.3.1. Parathyroid hormone (PTH)

4.3.2. Creatinine clearance

4.3.3. Ionized calcium (20 marks)