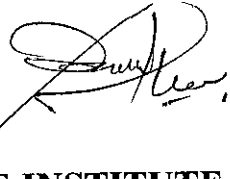


Master Copy: 

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 – December 2019

Date:- 13th December 2019

Time :- 1.00 p.m. – 4.00 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. A 19-year-old girl with low grade fever for more than three weeks duration was found to have enlarged left cervical lymph nodes. Chest x ray showed apical shadowing. The clinical suspicion was tuberculosis.
 - 1.1. What further investigations are recommended to confirm the diagnosis? (20 marks)
 - 1.2. Define chronic inflammation. (05 marks)
 - 1.3. Describe macroscopic and microscopic changes you expect to see in this patient's lymph node biopsy. (50 marks)
 - 1.4. Name two (02) other conditions that show similar microscopic appearance. (10 marks)
 - 1.5. Mention three (03) sequelae/complications of chronic inflammation. (15 marks)

2. A 45-year-old patient presented with abdominal pain, blood and mucous diarrhoea of more than 3 months duration. Endoscopy revealed multiple erythematous ulcers involving the rectum and sigmoid colon. The rest of the colon was unremarkable.
- 2.1. Name three (03) possible causes for the above presentation. (10 marks)
- 2.2. Describe the macroscopic and microscopic appearance of any one (01) of the conditions mentioned in 2.1 (40 marks)
- 2.3. Name three (03) local complications that may follow the condition mentioned in 2.1 (25 marks)
- 2.4. Name five (05) extracolonic manifestations of the condition mentioned in 2.1 (25 marks)

PART B
HAEMATOLOGY

Answer 3.1 and 3.2. in two separate answer books.

- 3.
- 3.1. A 40-year-old woman undergoes a routine full blood count (FBC) for a medical check-up. She is asymptomatic. Given below is her FBC.

Hb	12 g/dL
WBC	$7 \times 10^9/L$
Platelet count	$50 \times 10^9/L$

- 3.1.1. Comment on the FBC report. (05 marks)
- 3.1.2. List five (05) possible causes for the above findings. (10 marks)
- 3.1.3. Briefly outline the investigations you would do on this patient with relevant reasoning. (15 marks)
- 3.1.4. If all the investigations are normal what is the most likely diagnosis of this patient? (05 marks)
- 3.1.5. Briefly outline the long-term management of the above condition. (15 marks)

3.2. Write short notes on

- 3.2.1. investigating a patient with hypochromic microcytic anaemia. (30 marks)
- 3.2.2. investigations to confirm intravascular haemolysis. (20 marks)

PART C
CHEMICAL PATHOLOGY

4.

4.1.

- 4.1.1. Outline common causes of hypercalcaemia.
- 4.1.2. Outline how history, clinical findings and biochemical investigations would help in arriving at a diagnosis in a hypercalcaemic patient. (30 marks)

4.2. A 45-year-old man presented with shortness of breath for 4 weeks. Chest x-ray showed a developing effusion. List possible causes for the above clinical presentation. Outline how the pleural fluid analysis would help to arrive at a diagnosis in this patient. (30 marks)

4.3. A 36-year-old obese man presented to General Practitioner (GP) because of his concern on yellowish spots around the eyes. GP noted xanthelasma, arcus senilis and tendon xanthoma. Family history revealed his father and a paternal uncle had died of myocardial infarction in their 40s. His initial investigations show following results.

		Reference interval
Total cholesterol	12 mmol/L	<5.2
Triglyceride	2.7 mmol/L	0.55-1.9

- 4.3.1. What is the most likely diagnosis? Briefly explain why you have arrived at the given diagnosis.
- 4.3.2. What is the most common mode of inheritance in the above disease?
- 4.3.3. What additional biochemical tests should be performed to provide further information on lipid metabolism?
- 4.3.4. Name two (02) gene mutations, which lead to above diagnosis.
- 4.3.5. What are the principles of management of this patient? (15 marks)

Contd...../4-

- 4.4. A 65-year-old woman complained of lethargy and weakness for three weeks duration. About 6 months ago, she suffered from dizziness and fatigue and was treated with antidepressants due to normal investigatory findings. Her current test findings are as follows.

Fasting glucose	4.6 mmol/L	
Urea	2.3 mmol/L	(1.8-7.2)
Creatinine	93 mmol/L	(60-120)
Sodium	130 mmol/L	(135-145)
Potassium	4.8 mmol/L	(3.5-5.0)
Free T4	3 pmol/L	(10-23)
TSH	1.6 mIU/L	(0.4-4.2)
9am cortisol	50 nmol/L	(130-600)

- 4.4.1. Comment on the above results.
- 4.4.2. Mention the most probable diagnosis.
- 4.4.3. What further biochemical investigations you suggest?
- 4.4.4. Name one (01) non-biochemical test you would request for this patient.

(10 marks)

- 4.5. An one-month-old, term-baby suddenly collapsed and admitted to a local hospital, where patient was actively managed and transferred to Lady Ridgeway hospital for further management and diagnosis. On examination baby was dehydrated.

Following are blood investigations on this patient at Lady Ridgeway hospital

pH	7.30		(7.35 - 7.45)
HCO ₃ ⁻	16	mmol/L	(22 - 28)
Sodium	113	mmol/L	(135 - 145)
Potassium	7.1	mmol/L	(3.5 - 5.3)
Random glucose	40	mg/dL	
Urea	7.6	mmol/L	(1.5 - 3.0)

- 4.5.1. Comment on above results.
- 4.5.2. What is the most probable diagnosis?
- 4.5.3. What is the commonest underlying pathology for above condition?
- 4.5.4. What is the biochemical test you order to confirm the diagnosis?
- 4.5.5. How would you confirm the gender of this baby?

(15 marks)