Faculty of Medicine University of Ruhuna

Third Examination for Medical Degrees (Part II) – March/April 2022

Pathology Paper I

Wednesday 23rd March 2022 9.00 am to 11.00 am

Two hours

Answer **ALL SIX** questions.
Answer each part in a **SEPARATE** book.

Part A

1. A 79-year-old male who sustained multiple fractures in a road traffic accident died subsequently. The postmortem revealed pathological changes related to fat embolism. Bilateral hydronephrosis, chronic pyelonephritis and benign nodular hyperplasia of the prostate were also detected.

1.1. Briefly describe the pathogenesis of fat embolism in this patient. *(10 marks)*

1.2. Describe the macroscopic and microscopic appearances of kidneys in this patient. *(30 marks)*

1.3. Explain the pathological basis of bilateral hydronephrosis and chronic pyelonephritis in this patient. *(30 marks)*

1.4. Compare and contrast hyperplasia and hypertrophy. *(30 marks)*

Part B

2. Briefly describe the pathogenesis of the following.

2.1. Nephritic syndrome in a patient who had a sore throat a week ago. *(30 marks)*

2.2. Acute coronary syndrome in a 40-year-old male with diabetes and hypertension. *(50 marks)*

2.3. Organised subdural haematoma in a 90-year-old male. *(20 marks)*

Part C

3. A 65-year-old chronic smoker presented with haemoptysis, loss of appetite and loss of weight. Examination revealed cushinoid features. Chest X- ray revealed a hilar mass. X-ray of the spine revealed a lytic lesion in C4 -C5 vertebrae.

3.1. What is the most likely cause for this presentation? *(10 marks)*

3.2. List **five (05)** laboratory investigations which will help you to confirm the diagnosis? *(15 marks)*

3.3. Briefly describe the macroscopic appearance of this patient's lung. *(40 marks)*

3.4. Briefly describe the microscopic appearance of the hilar lesion. *(20 marks)*

3.5. Briefly describe the pathological basis of cushinoid features. *(15 marks)*

Part D

4. Describe the pathological basis of the following.

4.1. Portal hypertension in a patient with cirrhosis. *(30 marks)*

4.2. Development of cranial nerve palsies and hydrocephalus in a patient with tuberculous meningitis. *(30 marks)*

4.3. Prophylactic antibiotic coverage prior to invasive procedures in patients with chronic rheumatic heart disease. *(40 marks)*

Part E

5. A 22-year-old female presents with the complaints of excessive sweating and increased appetite for two months duration. Physical examination reveals fine tremors, a pulse rate of 100 beats per minute and a diffuse goitre. Hyperthyroidism is suspected.

5.1. State the biochemical investigations you would request to assess the functional status of her thyroid gland and explain the expected findings. *(30 marks)*

5.2. State **three (03)** causes for diffuse enlargement of the thyroid gland in patients presenting with a goitre and briefly outline the microscopic features of **one (01)** condition mentioned. *(25 marks)*

5.3. What is the most likely thyroid pathology if the thyroid stimulating Immunoglobulins (TSH receptor antibodies) were positive in this patient and briefly outline the pathogenesis of the condition mentioned? *(15 marks)*

5.4. Briefly discuss the differential diagnoses for a patient presenting with a solitary thyroid nodule. *(30 marks)*

Part F

6.

6.1. Outline the factors required for normal haemopoiesis. *(20 marks)*

6.2. Describe the pathogenesis of anaemia in chronic kidney disease. *(30 marks)*

6.3. Describe the pathological basis of anaemia in malignancies. *(30 marks)*

6.4. List **two (02)** haematological tests you would request in a patient presenting with anaemia and discuss how findings of these tests are used to identify morphological subtypes of anaemia. *(20 marks)*