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UNIVERSITY OF JAFFNA, SRI LANKA
SECOND EXAMINATION FOR MEDICAL DEGREES PART II– May 2023
Academic Year 2017/2018
Pathology-Paper II

Date: 08.05.2023 9.00am – 12.00pm. (03 hours)
Index number: .....
Write the answers in the given space below each question.
Answer all 10 questions

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1. Two patients, one with chronic kidney disease (CKD) and the other with chronic rheumatoid arthritis presented with mild pallor. Anaemia of CKD and anaemia of chronic inflammation/disease (ACD) were diagnosed, respectively. Both patients' full blood count (FBC) showed Hb of 10.2g/dL.

1.1. Describe the expected findings of the following blood tests in ACD and anaemia in CKD. (20 Marks)

1.FBC

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2. Blood picture

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3. Reticulocyte count

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4. Serum ferritin

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1.2. Compare and contrast pathogenesis of anaemia of CKD and anaemia of chronic disease (ACD) (Note: focus only the key pathological mechanisms related to pure ACD and anaemia due to CKD). (20 Marks)

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Both patients are followed up in medical clinics. After five years of follow up both present with moderately severe anaemia.

1.3. Outline the basis for the severe anaemia in patients with CKD and ACD over many years of follow up. (Note: exclude the key pathological mechanisms mentioned in 1.2 in your answer). (15 Marks)

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1.4. The patient with chronic rheumatoid arthritis developed continuous and progressive backache. Investigations revealed ESR of 90 mm 1st hour and elevated serum calcium level. Clinician suspects Multiple Myeloma.

1.4.1. Define **multiple myeloma** (MM). (10 Marks)

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1.4.2. Draw a flow chart on how would you investigate him to diagnose MM. (20 Marks)

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1.4.3. Outline the pathological basis for hypercalcemia in MM. (15 Marks)

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2. A patient presents with recent onset exertional dyspnea, dark urine and yellow discolouration of eyes. Examination revealed pallor, jaundice and soft splenomegaly. Haemolytic anaemia is suspected by the clinician.

2.1. List four (04) tests you would request to confirm the presence of haemolytic anaemia and indicate the expected findings. (20 Marks)

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2.2. Outline the basis for splenomegaly in haemolytic anaemia. (15 Marks)

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2.3. If autoimmune haemolytic anaemia is suspected, mention the additional tests which would help in the confirmation and indicate the expected findings. Give the reasons for the expected findings. (10 Marks)

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2.4. List four (04) long term complications of haemolytic anaemia. (10 Marks)

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2.5. Compare and contrast the two broad groups of haemolytic anaemias classified based on site of red cell destruction. (20 Marks)

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2.6. State two (02) findings in the history which would favour an inherited nature of haemolytic anaemia. (10 Marks)

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2.7. Outline the pathological basis of anaemia in one of the inherited haemolytic anaemia. (15 Marks)

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Index number: .....

9.00am – 12.00pm. (03 hours)

3. A 65-year-old man underwent anterior resection for upper rectal cancer five days ago and developed right lower limb swelling. He was diagnosed with deep vein thrombosis on his left lower limb and started on enoxaparin and warfarin.

3.1. Define thrombus. (10 Marks)

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3.2. Mention three (03) primary factors (Virchow's triad) contributing to thrombus formation. (10 Marks)

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3.3. List the major steps in thrombus formation in a vein. (20 Marks)

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3.4. Briefly mention the risk factors which could contribute to thrombus formation in this patient. (10 Marks)

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3.5. List five (05) congenital causes that increase the risk of thrombus formation. (15 Marks)

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3.6. Mention five (05) clinical features which support the diagnosis of deep vein thrombosis in this patient. (10 Marks)

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3.7. Mention the scoring system used to predict the risk of deep vein thrombosis in surgical patients. (05 Marks)

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3.8. List four (04) major prophylactic methods that could be applied to prevent deep vein thrombosis in this patient. (10 Marks)

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3.9. Mention the consequences of venous thrombosis. (10 Marks)

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Index number: .....

4. A 50-year-old man who is a chronic alcoholic for the past 25 years, presented to the accident and emergency unit with massive haematemesis. He was resuscitated and therapeutic emergency upper gastro intestinal endoscopy was performed. History and examination revealed the following: fatigue, easy bruising, itchy skin and bilateral lower limb oedema.

4.1. Mention the most likely diagnosis of the acute condition he presented with. (05 Marks)

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4.2. Explain the pathophysiology of the condition mentioned in 4.1. (20 Marks)

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4.3. Mention the underlying condition that caused the acute condition mentioned in 4.1. (05 Marks)

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4.4. List five (05) causes for the condition mentioned in 4.3. (10 Marks)

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4.5. List three (03) blood investigations you will order and indicate the expected findings in the condition mentioned in 4.3. (15 Marks)

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4.6. Explain briefly the macroscopic and microscopic features of the condition mentioned in 4.3. (40 Marks)

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4.7. List four (04) other complications that can occur in this patient. (10 Marks)

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5.

5.1. A 55- year- old woman found to have ovarian malignancy.

5.1.1. Briefly describe the risk factors of ovarian malignancy in women. (30 Marks)

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5.1.2. Broadly classify malignant ovarian tumours. (20 Marks)

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5.2.

5.2.1. Define Vulval intraepithelial neoplasia. (20 Marks)

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5.2.2. Describe the classification of vulval intraepithelial neoplasia. (20 Marks)

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5.2.3. Mention two (02) preventive measures of vulval intraepithelial neoplasia. (10 Marks)

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6. A 65 -year -old man presented with painless per rectal bleeding. A Colonoscopic examination revealed a malignant growth at mid rectum and a synchronous 1cm polyp at upper rectum.

6.1. Define the term "colonic polyp". (10 Marks)

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6.2. List three (03) histological types of neoplastic adenomatous polyps. (10 Marks)

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6.3. Define "Synchronous lesion". (10 Marks)

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6.4. Explain the "adenoma – carcinoma sequence". (20 Marks)

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6.5. Mention the most common histological type of colorectal carcinoma. (10 Marks)

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6.6. List three (03) risk factors of colo-rectal carcinoma. (10 Marks)

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6.7. Mention the tumour marker used in colorectal cancer and outlines its use in the management. (20 Marks)

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6.8. Explain the pathophysiological basis of the increased incidence of intestinal obstruction seen on left colon rather than on right colon in colorectal cancers. (10 Marks)

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UNIVERSITY OF JAFFNA, SRI LANKA
SECOND EXAMINATION FOR MEDICAL DEGREES PART II– May 2023
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7. A 15-year-old boy admitted to the ward for further revaluation of bilateral leg swelling of a week duration. He noticed a gradual worsening of leg swelling for the last week and mild shortness of breath on moderate exertion in the last few days. He had no other complains other than sore throat 2 weeks prior to the leg swelling and settled by itself with home remedies. Examination revealed bilateral ankle oedema and blood pressure of 150/100 mmHg.

His urine report showed the following.
Protein ++
Red cells- Moderately field-full in high power field
Pus cells – 8-10 in high power field
His serum creatinine was 17 mg/dL (Normal range 0.7-1.1 mg/dL)

7.1. Mention the condition presented above and the likely aetiology. (20 Marks)
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7.2. Mention the serological investigation which is needed to support the diagnosis mentioned in 7.1. (20 Marks)
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7.3. Mention the test to quantify proteinuria. (10 Marks)
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7.4. Mention the histological pattern which is commonly associated with the condition mentioned in 7.1. (20 Marks)
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7.5. Explain the pathophysiological basis of the urine full report findings given above. (20 Marks)

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7.6. List three (03) complications of the above condition. (10 Marks)

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8. A 40 -year- old man presented to the outpatient department with 2 month history of polyuria and polydipsia.

8.1. Define the terms polyuria and polydipsia. (10 Marks)
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8.2. List four (04) differential diagnosis of this patient. (20 Marks)
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8.3. Explain the pathophysiological basis of polyuria in the conditions mentioned in (8.2). (20 Marks)
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8.4. Mention one (01) cause for each condition mentioned in 8.2. (10 Marks)
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8.5. Mention the confirmatory tests of each condition mentioned in 8.2 and indicate the expected finings. (40 Marks)

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9. A 70 -year-old man presented to the emergency department with sudden onset of severe headache, blurred vision and shortness of breath of 2 days duration. On admission his blood pressure was 240/140mmhg.

9.1. Mention the most likely diagnosis. (05 Marks)
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9.2. Define the term mentioned in 9.1. (05 Marks)
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9.3. Mention two (02) other clinical features you would expect in this patient. (05 Marks)
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9.4. Mention four (04) causes for the condition mentioned in 9.1. (20 Marks)
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9.5. Mention three (03) investigations needed to manage this patient and indicate the expected findings. (15marks)
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9.6. List four (04) complications that can occur in this patient. (20Marks)
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9.7. Briefly describe the morphological changes (gross and microscopic) you would expect in the following organs of this patient.

1.Kidney (10Marks)

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2. Heart. (10Marks)

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3. Blood vessel. (10Marks)

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10. A 63 – year - old man presented with haemoptysis and bone pain. Chest- X-ray revealed a large right peri- hilar mass and multiple lytic lesions in the bone. A diagnosis of lung carcinoma was confirmed.

10.1. Mention the methods which are available to collect the biopsy to arrive at a diagnosis in this patient. (20 Marks)

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10.2. Briefly describe how lung carcinoma is classified based on histology. (20 Marks)

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10.3. List three (03) precursor lesions of lung carcinoma. (15 Marks)

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10.4. List four (04) other clinical features of lung carcinoma and briefly explain the pathological basis of the clinical presentation. (30 Marks)

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10.5. Mention three (03) paraneoplastic syndromes which occur in lung cancer. (15Marks)

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