



UNIVERSITY OF JAFFNA, SRI LANKA
SECOND EXAMINATION FOR MEDICAL DEGREES (2ND).-DEC 2020
Pathology Paper II

Date: 16.12.2020

Time: 03 hours

ANSWER ALL THE 10 QUESTIONS

Write the answers in the given space below each question.

1. Anaemia is a common clinical manifestation. Based on underlying pathology, anaemia can be classified in to anaemia due to marrow under production, anaemia due to excessive red cell destruction and anaemia due to acute blood loss.

1.1. Define anaemia. (10 marks)

1.2. State key characteristics in each group of anaemia stated above. (20 Marks)

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1.3. List different categories of disorders falling in to marrow underproduction group of anaemia. (15 Marks)

1.4. Outline pathological basis of anaemia in one
1.3.

1.5. Outline the manifestations you would expect in severe uncompensated
anaemia in an infant. (20 Marks)

1.6. Briefly outline red cell characteristics you can observe in anaemia due to
excessive red cell destruction. (15 Marks)



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2 A 68- year - old male was admitted to Teaching Hospital Jaffna with a clinical suspicion of chronic myeloid leukemia (CML).

2.1. Outline the pathogenesis of CML. (20 marks)

2.2. State the blood picture findings expected in CML. (15 marks)

2.3. Patient was treated for one year and CML progressed to acute myeloid leukemia (AML). State how you would confirm the diagnosis of AML. (15marks)

2.4. Outline the pathological basis for the following in AML,

2.4.1 Excessive bleeding tendency in AML. (10 marks)

2.4.2. Fever in AML. (10 marks)

2.4.3 Organomegaly in AML. (15 marks)

2.5. Outline the investigations useful to manage AML. (15 marks)



3 A 67- year —old male smoker presents with progressive dysphagia. He has lost 10 Kg in . the last month and the dysphagia is worse for solids compared to liquids.

3.1. That is the most likely diagnosis? (10 marks)

3.2. List 2 different histological type of above condition. (10 marks)

3.3. List four (04) risk factors for each histological type mentioned in 3.2, (20 marks)

3.4. List the different macroscopic appearance of condition mention in 3.1. (10 marks)

3.5. Explain the possible local extensions (organs) of condition mentioned in 3.1. (2 Ozarks)

3.6. Write one investigation which will confirm your diagnosis. (10 marks)

3.7. Write the reasons for progressive dysphagia and more dysphagia to solid than liquid. (20 marks)

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4 A 47-year-old man, whose father died of metastatic rectal cancer, was referred to the outpatient surgical clinic by a primary care physician with positive fecal occult blood for further evaluation. (05 marks)

4.1. How would you further evaluate him?

Further evaluation revealed a polyp at the upper rectum. Histopathology of the polyp was reported as adenomatous polyp with high grade dysplasia.

4.2. What do you understand by the term dysplasia? (10 marks)

4.3. Under the microscope how would you differentiate dysplasia from carcinoma? (05 marks)

Even though follow up plan was informed to the patient, he has defaulted the follow up and after 3 years of initial review he presented with bleeding per rectum. Further evaluation revealed a poorly differentiated adenocarcinoma of the rectum with a solitary metastasis in the left lobe of the liver.

4.4. Mention five risk factors for carcinoma of the rectum other than the family history. (10 marks)

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4.5. **Explain the term poorly differentiated adenocarcinoma. (15 marks)**

4.6_ **How did an adenomatous poly turn around an adenocarcinoma in this patient? (15 marks)**

4.7_ **Briefly describe the steps of spread of a rectal cancer to the liver. (20 marks)**



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4.8. Briefly describe the staging of rectal cancer. (20 marks)

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5.1 A 55-year-old man was found to have serum creatinine of 290 μ mol/L (RR 60-115 μ mol/L) on routine check-up at his General Practitioner's office. He was a known diabetic for the last 10 years and was not controlling his blood glucose level as expected. He was referred to the hospital nephrology clinic and serum creatinine was repeated after few days and was found to be 300 μ mol/L. Chronic kidney disease was confirmed with a renal biopsy later.

5.1.1. His estimated glomerular filtration rate (eGFR) was 20.1 mL/min/1.73 m². How will you grade chronic kidney disease using eGFR and in what chronic kidney disease grading is he in? (15 marks)

5.1.2. List five (05) blood investigations you will do in this patient and indicate the expected changes. (20 marks)

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5. L3 List two (02) investigations that can be done in urine in this scenario, (05 marks)

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5.2. Give the macroscopic and microscopic changes of kidneys in the following conditions.

5.2.1 Diabetes mellitus. (40 marks)

5.2.2 Calculi in the left renal pelvis. (20 marks)



6 A 45- year- old woman presented to the outpatient clinic with a solitary small lump in the thyroid region of 3 months duration.

6.1. List one (01) laboratory (non-biochemical/ non-endocrine) test you will do in this patient. (10 marks)

6.2. Total thyroidectomy was done and the histopathology report revealed a papillary carcinoma of thyroid. Describe the microscopic features of papillary carcinoma of thyroid. (40 marks)

She developed tetany after few days postoperatively. Briefly describe the pathogenesis of tetany in this patient. (20 marks)

- 6.4. List one (01) biochemical test (non-endocrine) you will do in this patient and what change you will expect in that test? (10 marks)

- 6.5. What precautions will you take when doing the test mentioned in 6.4? (20 marks)



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7.1 A 50-year-old healthy man presented with sudden onset of fever with chills and rigor, and productive cough. Physical examination revealed stony dullness in **the** right lower zone. Auscultation revealed bronchial breathing in the right middle zone and, reduced air entry and inspiratory crackles in the right side of the lung.

7.1.1. Mention the most likely diagnosis? (05 marks)

7.1.2. Outline the pathophysiology of the following clinical features. (15 marks)

1. Bronchial breathing on auscultation.

2. Stony dullness on percussion.

3. Inspiratory crackles on auscultation.

7.1.3. List three (03) complications of the condition you mentioned in 7.1.1. (15 marks)

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7.1.4. List three (03) basic biochemical or radiological investigations you will perform in this patient and indicate the expected findings. (15 marks)

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7.2. A 65 — year-old man who admits to a 60-pack year smoking history, complains of fatigue and dyspnea with minimal exertion and a cough that is productive every morning throughout the year for last 2 years.

7.2.1 Mention the most likely diagnosis? (05 marks)

7.2.2 Outline the pathogenesis of the condition you mentioned in 7.2.1. (20 marks)

7.2.3. List four (04) complications of the condition you mentioned in 7.2.1. (20 marks)

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7.2.4. List two (02) risk factors other than smoking for the condition you mentioned in 7.2.1. (05 marks)

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8 A 45-year --old woman, while recovering in bed several days after having an abdominal . surgery, develops an acute onset of chest pain and shortness of breath.

On further questioning patient also revealed a 2-day history of a swollen and tender right leg. On examination the patient appears anxious and tachypneic, but has good air movement in the lungs bilaterally.

8.1. Mention the most likely diagnosis? (05 marks)

8.2. List two (02) emergencies other **than** mentioned in 8.1 that may present with acute chest pain. (10 marks)

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8.3. State the possible underlying mechanism for the condition you mentioned in 8.1? (10 marks)

8.4. Mention the pathogenesis and list three (03) risk factor for the development of the condition mentioned in 8.1.? (30marks)

8.5. Mention one investigation which may confirm / support your diagnosis and indicate the expected finding. (10 marks)

8.6. Briefly mention the reason for swelling of **the right leg of this patient.** (15 marks)

8.7. List two (02) conditions which **may be associated with bilateral leg swelling and mention the underlying mechanism for the swelling in each condition.** (20 marks)



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9.1 A 40-year-old man is being evaluated as a new patient complains of severe headache and is found to have a blood pressure of 170/95mm Hg

9.1.1. List four (04) causes for high blood pressure in this patient. (20 marks)

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9.1.2. Mention the effects of hypertension on blood vessels and heart.

(30 marks)

1. Blood vessels

2. Heart

9.2. A 63-year-old man experienced loss of function of his left upper and lower extremities, One week back he had experienced several episodes of left-sided weakness lasting a few minutes, but he had recovered function after each of those episodes. Previously, he had been in good health except for occasional angina relieved by rest.

9.2.1. Mention the most likely diagnosis? (10 marks)

9.2.2, Mention the underlying mechanisms associated with the condition you mentioned in 9.2.1? (10 marks)

9.2.3. List four (04) risk factors other than Hypertension for developing the condition mentioned in 9.2.1?(20 marks)

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9.2.4. Mention one (01) investigation that will help in the diagnosis and the treatment of this condition you mentioned in 9.2.1. (10 marks)



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10.1 A 25-year-old man complains of **swelling of the right** scrotal area, which he has noted for approximately 1 month. There is no history of trauma to the area and he has **no medical problems**. On examination, there is a **5-cm firm, nontender lump** inside the right hemi scrotum.

10.1.1. Mention the most likely diagnosis? (10 marks)

10.1.2. Briefly mention the histological types of the diagnosis you mentioned above.

(15 marks)

10.2. A 21-year-old nulliparous woman has a 9-cm right adnexal mass that on ultrasound appears cystic and solid.

10.2.1. Mention the most likely diagnosis? (10 marks)

10.2.2. Mention the morphological appearance of the condition you mentioned above. (15 marks)

10.3. A 7-year-old child presented with oliguria, haematuria, oedema, and impaired renal function. His past history revealed a sore throat 10 days back.

10.3.1. Mention the most likely diagnosis? (10 marks)

10.3.2. Mention three (03) investigations you will perform in patient and this indicate the expected findings. (15 marks)

10.4. A 65-year-old woman complains of soreness and oozing from the nipple of her left breast. There is no history of trauma. On examination, there is fissuring and ulceration of the areola and nipple, and a palpable lump below the areola region.

10.4.1. Mention the most likely diagnosis? (10 marks)

10.4.2. List three (03) risk factors for the condition you mentioned above. (15 marks)
