



Pathology Paper II

Date: 08.09.2021.

Time: 03 hours

ANSWER ALL THE 10 QUESTIONS

Write the answers in the given space below each question.

01. A 67- year - old male presented to the chest clinic with productive cough and scanty sputum. He also had pain on the left lateral aspect of his chest when breathing. The Computerized Tomography (CT) scan revealed diffuse thickening of the pleura and fluid collection.

1.1. Name five (05) samples that may be obtained in respiratory diseases for diagnostic purposes. (15 Marks)

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1.2. State five (05) macroscopic features that must be assessed to determine the nature of pleural fluid. (15 Marks)

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1.3. List five (05) causes of pleural effusion. (15 Marks)

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1.4. State the three (03) types of characteristic effusions that may occur in any of the conditions mentioned in 1.3. (15 Marks)

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02. A 42-year-old woman presented to the Accident & Emergency department with an eight hour history of severe right upper quadrant pain and vomiting. Clinical diagnosis of calculus acute cholecystitis was made by the surgeon.

2.1. List five (05) risk factors for gall stone formation? (10 Marks)

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2.2. Briefly explain the pathogenesis of gallstone formation? (20 Marks)

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2.3. List three (03) common types of gallstones? (00 Marks)

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2.4. Briefly describe the pathogenesis of acute cholecystitis? (30 Marks)

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2.5. List three (03) ultra sound scan features of acute cholecystitis? (15 Marks)

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2.6. List three (03) the complications of acute cholecystitis? (15 Marks)

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03. Mention

1. The most likely diagnosis (05 marks),
2. One risk factor / aetiology (05 marks),
3. One complication (05 marks) and
4. The pathological changes (**macroscopic and microscopic**) (10 marks), that may occur in the following conditions.

3.1. A 65 — year - old man presented to the surgical ward with acute retention of urine and was catheterized by the house officer. Digital rectal examination revealed a smooth prostate and his recent PSA was normal. (25 Marks)

1. Diagnosis:

2. Risk factor 1 aetiology:

3. Complication:

4. Pathological changes:

3.2. A 10-year-old boy developed facial swelling, reduced urine output and cola coloured urine. Urinalysis revealed proteinuria and haematuria. (25 Marks)

1. Diagnosis:

2. Risk factor 1 aetiology:

3. Complication:

4. Pathological changes:

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3.3. A 65 — year - old man admitted to the ward with loin pain, haematuria and (25 Marks)
ballotable kidney. CT scan revealed right side heterogeneously enhancing
10 cm renal mass,

1. Diagnosis:

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2. Risk factor aetiology:

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3. Complication:

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4. Pathological changes:

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3.4. A 55 — year - old man presented with painless visible haematuria and (25 Marks)
flexible cystoscopy revealed a 3cm bladder growth.

1. Diagnosis:

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2. Risk factor / aetiology:

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3. Complication:

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4. Pathological changes:

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04. An infant presented with failure to thrive. Examination revealed pallor and hepatosplenomegaly. Thalassaemia major was suspected.

4.1. **Outline** the pathological basis of anaemia in thalassaemia. (25 Marks)

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4.2. **Outline** the basis for hepatosplenomegaly in thalassaemia. (10 Marks)

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4.3. Describe the expected findings in red cells in blood picture in thalassaemia major. (15 Marks)

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4.4. Describe the findings of the confirmatory test capillary electrophoresis or high performance liquid chromatography in thalassaemia major. (15 Marks)

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4.5. State the expected findings in capillary electrophoresis or high performance liquid chromatography in parents of this infant. (10Mark.\$)

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- 4.6. Outline the findings in red cell parameters expected in full blood count of parents of this infant. (10 Marks)

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- 4.7. Management of thalassaemia need blood transfusions. (15 Marks)
List four (04) acute complications of blood transfusion.

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05. A 67 — year - old male presented with high fever, pallor and gum bleeding. Acute leukemia was suspected.

(15 Marks)

5.1. State the blood picture findings expected in acute leukemia.

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5.2. Outline the pathological basis for high **fever**.

(20 Marks)

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5.3. Outline the pathological basis for gum **bleeding**.

(20 Marks)

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5A. State **how would** you confirm the diagnosis of acute leukemia.

(20 Marks)

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5.5. Patient was treated and developed severe pancytopenia. Outline the pathological basis for pancytopenia following chemotherapy.

(15 Marks)

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5.6. List one (01) test that will be useful to assess the bone marrow activity and 0 °Marks)
indicate the expected findings in increased haemopoiesis.

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06. A 45-year-old male diabetes patient sustained a laceration while cleaning tools in the garden shed. Two days later he developed fever with chills and pus discharge from the wound and was admitted to the hospital. The house officer found that his BP was 80/60 mm. Hg and PR was 110 beats/min.

6.1. Define shock. (10 Marks)

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6.2. State three (03) types of shock and indicate the principal mechanism operate in each type. (30 Marks)

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6.3. What is the type of shock that may have occurred in this patient? (05 Marks)

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6.4. Mention two (02) causes for each type mentioned in 6.2. (15 Marks)

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6.5. Mention the laboratory tests you would order to evaluate the patient, and indicates the usefulness and expected findings of the tests. (30 Marks)

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6.6. Mention the pathological changes that may be seen in the liver and the lungs of this patient. (10 Marks)

Liver :

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Lungs:

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07_ A 65-year-old woman presented to the surgical clinic with a painless right breast lump of three months duration. After the clinical assessment and radiological investigation, she has undergone a core biopsy from the lump. Histology revealed it is cancer of breast.

7.1. List ten (10) risk factors associated with breast cancer. (10 Marks)

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7.2. Briefly mention the advantages of doing core biopsy than Fine needle aspiration cytology (10 Marks)

7.3. What would be the most common histological report in this lady? (05 Marks)

7.4. Mention the other histological types of breast cancer ? (10 Marks)

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7.5. List the common sites of metastatic deposits of breast cancer ? (10 Marks)

7.6. What do you understand by "histological grade or Nottingham grade of breast cancer"? (15 Marks)

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(25 Marks)

(15 Marks)

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08.

8.1. A 30- year-old woman presented to the endocrine clinic with primary subfertility, menstrual disturbances and milky discharge from nipples. On examination she was found to be obese and had visual field defects (bitemporal hemianopia).

8.1.1. Mention the most probable diagnosis.

8.1.2. Mention the reason for the development of bitemporal hemianopia in this patient. (10 Marks)

8.1.3. List three (03) important hormone tests you will do in this patient and indicate the expected findings. (05 Marks)

(15 Marks)

8.2. A 40 — year —old woman complained that she is gaining weight and feels tired. On examination she was found to have moon face, central obesity and abdominal striae.

8.2.1. Mention the most probable diagnosis (05 Marks)

8.2.2. Mention one (01) aetiological factor you should exclude in the history. (05 Marks)

8.2.3. Mention one (01) first line endocrine test (non-dynamic) that you will do in this patient. (10 Marks)

8.2.4. Mention one (01) dynamic function test that you will do as a first line test in this patient. (10 Marks)

8.2.5_ Briefly explain how you will perform the test mentioned in 8.2.4. (20 Marks)

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8.2.6. List four (04) causes for abnormal results of the test you mentioned in 8_24. (20 Marks)

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09. A 22-year-old man presented to the emergency department with severe right lower quadrant abdominal pain, and abdominal bloating and distension. The patient noted intermittent mild blood and mucus diarrhea on and off for the past 6 months associated with abdominal pain and low-grade fevers of 101 F. The diarrhea was typically nocturnal or postprandial. There was an intervening asymptomatic periods for a few weeks. 5 Kg of unintentional weight loss was noted over this period. Laboratory workup supported that the cause for the presentation was inflammatory bowel disease.

9.1. List five (05) other possible causes for the above presentation. (05 Marks)

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9.2. It was decided to proceed with lower gastrointestinal endoscopy. (05 Marks)
Endoscopic examination and histology findings of the biopsy confirmed that the cause for the presentation was Crohn's disease.
Mention the risk factors for Crohn's disease.

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9.3. Mention the endoscopic features of Crohn's disease. (20 Marks)

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9.4. Mention how the endoscopic features of the Ulcerative colitis differ from above findings? (20 Marks)

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9.5. Mention the microscopic features which confirm the diagnosis of Crohn's (20 marks) disease.

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9.6. Mention how the microscopic features of the Ulcerative colitis differ from above findings? (20 Marks)

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9.7. Mention the complications of Crohn's disease. (10 Marks)

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10. Mention

- 1). Two (02) symptoms, 2).Two (02) risk factors, 3).Two (02) complications and
4).Gross appearance of the following conditions.

10.1. A 35 — year — old male was admitted to the emergency department. CT of (25 Marks)
brain revealed raised intracranial pressure.

10.1.1. Symptoms. (05 marks)

10.1.2. Risk factors.

(05 marks)

10.1.3. Complications.

(05 marks)

10.1.4. Gross appearance.

(10 marks)

10.2. A 21 - year — old girl was admitted to the medical ward. Echocardiogram (25 Marks)
of heart revealed infective endocarditis.

10.2.1. Symptoms. (05 marks)

10.2.2. Risk factors

(05 marks)

10.2.3. Complications.

(05 marks)

10.2.4. Gross appearance.

(10 marks)

10.3. A 62 year old male was admitted to the cardiology unit. (25 Marks)

Electrocardiogram revealed an acute myocardial infarction.

10.3.1. Symptoms. (05 marks)

10.3.2. Risk factors. (05 marks)

10.3.3. Complications. (05 marks)

10.3.4. Gross appearance. (10 marks)

10.4. A 49-year-old female admitted to the gynecological ward. Transvaginal ultrasound revealed endometrial cancer (25 Marks)

10.4.1. Symptoms. (05 marks)

10.4.2. Risk factors. (05 marks)

10.4.3. Complications. (05 marks)

10.4.4. Gross appearance. (10 marks)