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UNIVERSITY OF JAFFNA, SRI LANKA
SECOND EXAMINATION FOR MEDICAL DEGREES-25TH SEPTEMBER 2019
PATHOLOGY Paper II

Date: 25.09.2019.

Time: 03 hours

ANSWER ALL THE TEN QUESTIONS

Answer each QUESTION in separate answer book

1. A 27 year old man presented to the surgical unit with a history of intermittent passage of blood in the stool for the past 6 months. He mentioned that his father had undergone a total colectomy at the age of 40. Clinical examination revealed mild pallor. Colonoscopy revealed multiple (more than 100) polyps in the large intestine. Three of the largest polyps were biopsied and sent for histopathological examination.
 - 1.1 State the most likely clinical diagnosis (05Marks)
 - 1.2 State two morphological types of polyps that histopathological examination may reveal (10Marks)
 - 1.3 Describe the macroscopic and microscopic appearance of any one type of polyp you mentioned in 1.2 (30Marks)
 - 1.4 Name the type of malignancy that may develop in the polyps. (05 Marks)
 - 1.5 Name the putative gene involved in the condition you mentioned in 1.1 (05 Marks)
 - 1.6 Briefly describe the underlying genetic mechanism leading to the condition you mentioned in 1.1 (40Marks)
 - 1.7 Name the likely specimen that you may receive for histopathological examination from the surgery. (05 Marks)

2. A 45 year old man presented to the medical ward with recurrent episodes of right hypochondrial pain, fever and mild jaundice. The patient was subjected to surgery after two weeks.
 - 2.1 Mention two possible clinical conditions that are the cause of his symptoms (10Marks)
 - 2.2 State one laboratory and one radiological investigation which can be performed on this patient (20 Marks)
 - 2.3 State two possible samples that may be sent to the histopathology laboratory for analysis (20 Marks)
 - 2.4 Describe the macroscopic and microscopic appearance of the organ affected in any one of the condition you mentioned in 2.1 (40 Marks)
 - 2.5 State the sequelae to the condition you described in 2.4, if the patient was not subjected to surgery (10 Marks)

3. A 45 year old female presented to the gynaecological unit with a history of whitish vaginal discharge and contact bleeding for 3 months. She had undergone a cervical smear 9 months ago and vaguely remembered that she was asked to come for a repeat smear which she did not take seriously. Colposcopic examination revealed an exophytic irregular whitish area in the cervix which was biopsied for histopathological assessment
- 3.1 State one possible cause for the clinical manifestation (10Marks)
- 3.2 Name the potential causative agent and state two types implicated etiology (30 Marks)
- 3.3 Describe briefly the mechanism of action of the causative agent in the development of the condition you mentioned in 3.1 (30Marks)
- 3.4 Describe briefly the morphological changes in the progression of the condition mentioned in 3.1 (20 Marks)
- 3.5 Name the stain used for the evaluation of this patients cervical smear (10Marks)
4. A 67 year old woman presented to the medical unit of the Jaffna teaching hospital with dyspnea. She had a past history of a lump, removed from her left breast 10 years ago and the histopathology report was not available. Chest x ray revealed left pleural effusion.
- 4.1 Name three possible causes of pleural effusion in this patient (15Marks)
- 4.2 List three laboratory investigations that can be performed on the pleural fluid to arrive at a diagnosis (15 Marks)
- 4.3 List five parameters that distinguish exudates from transudates (25 Marks)
- 4.4 Describe and illustrate with a diagram the appearance of any three types of cells you may see in any one of the condition you have mentioned in 4.1 (45Marks)
5. A 75 year old man was brought to the outpatient department with severe dyspnea, and orthopnoea. On examination she had bilateral pedal oedema and basal crepitations on auscultation.
- 5.1 Define oedema (10Marks)
- 5.2 State the different types of oedema based on anatomical location (25Marks)
- 5.3 Describe briefly the mechanism of occurrence of pulmonary oedema in congestive cardiac failure (25Marks)
- 5.4 Explain briefly the reason for the clinical manifestations of the patient (40Marks)

6. A 5 year old boy presented to the OPD with complaints of generalized body swelling and passing small amounts of urine that is sometimes dark brown in colour. His blood pressure was 170/100 Hg.
- 6.1 What is the most likely diagnosis (10Marks)
 - 6.2 Name 4 investigations that would be helpful in the diagnosis (10Marks)
 - 6.3 Describe the microscopic changes that occur in the kidney (40Marks)
 - 6.4 Describe the macroscopic and microscopic changes seen in hypertension in the kidney (40Marks)
7. Briefly **outline** the pathological basis of
- 7.1 Bleeding in Disseminated Intravascular Coagulation (DIC). (30 Marks)
 - 7.2 Increased reticulocyte count in haemolytic anaemia. (30 Marks)
 - 7.3 Haemosiderinuria in intravascular haemolysis. (40Marks)
8. A 67 year old male presents with backache and bone pain. The X Ray revealed a pathological fracture and lytic lesions.
- 8.1 State the most likely disease you suspect and the cell involved in this disease (10 Marks)
 - 8.2 Describe the pathological basis for the radiological findings (20 Marks)
 - 8.3 List four **blood** tests useful in the investigation of this condition (40 Marks)
(mention the sample type collected from the patient and the expected findings in disease you mentioned in 8.1).
 - 8.4 Name specific substance you expected in these patients urine and state the pathological basis for the presence of that substance in urine (30 Marks)



9. A 60 year old overweight woman was admitted for an elective shoulder repair. She also complains of feeling tired all the time. She has constipation. Examination revealed slow ankle reflexes.

- 9.1 What is the diagnosis? (10 Marks)
- 9.2 Mention three (03) causes for your diagnosis (15 Marks)
- 9.3 Mention one (01) biochemical test to diagnose the condition and indicate the expected findings (10 Marks)

The day before her surgery she develops acute onset of central crushing chest pain, radiating to her left arm. She also was sweaty and felt nauseous.

- 9.4 What is the diagnosis/ underlying pathology for her acute symptoms? (10 Marks)
- 9.5 Mention three (03) biochemical abnormalities you would expect in her blood and indicate the changes (30 Marks)
- 9.6 Mention two (2) causes of death of this patient (10 Marks)

Despite treatment, she subsequently died after 2 days.

- 9.7 Mention the changes you would observe in her blood vessels, kidneys and liver. (15 Marks)

10. A 65 year old known diabetic patient found semi-comatose. Physical examination revealed reduced skin turgor.

- 10.1. List three (03) causes for his clinical condition (15 Marks)
 - 10.2. List three (03) biochemical tests you would perform in this patient to find out the causes you mentioned in 10.1 and indicate the expected findings. (30 Marks)
- A day after admission she had slurring of speech and detailed examination revealed weakness of the left upper and lower limbs.
- 10.3. What is the most likely diagnosis? (10 Marks)
 - 10.4. State two (02) possible pathogenic mechanisms for the above clinical condition (10 Marks)
 - 10.5. Mention one (01) cause for each pathogenic mechanism mentioned in 10.4 (10 Marks)
 - 10.6. Mention the pathogenesis of any one of the mechanism you mentioned in 10.4. (25 Marks)