



Faculty of Medicine, University of Ruhuna
Medical Laboratory Science Degree Programme

Year-end examination Year 2 – July 2015
5th Batch - Theory – SEQ – Haematology
Tuesday 4th August 2015 Time: 10.15 am. to 11.15 pm. (one hour)



Instructions:

Index Number

Answer only two questions. First question is compulsory.

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Question 1

A 40 year old male presents with pallor and the clinician wanted to confirm anaemia. He requests FBC and BP.

1.1. State the most suitable sample/samples you should receive at the laboratory to perform these tests. (Give the important and specific details relevant to medical laboratory science) (15)

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1.2. Indicate five sample rejection criteria for FBC (10)

- a.....
- b.....
- c.....
- d.....
- e.....

1.3. The blood picture revealed moderately hypochromic microcytic red cells with moderate anisopoikilocytosis and polychromasia.

1.3.1 Describe how you would verify hypochromasia and microcytosis using FBC report (20)

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1.3.2 What does ' polychromasia' mean? (5)

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1.3.3 What is the test which can be performed to confirm your answer in 1.3.2? (5)

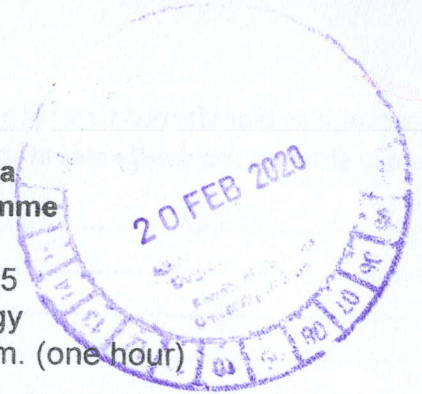
1.3.4 State the main differences in the procedure and performance between the test you mentioned in 1.3.3 and blood picture (10)

1.3.5. Describe how you would ascertain quality of the test mentioned in 1.3.3 ? (10)

1.4. Finally iron deficiency was suspected and the clinician wanted to perform stools occult blood test in this patient. Describe five important advice you would give to this patient on preparation for this test. (25)



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Question 2

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A 49 year old patient presents with hepatosplenomegaly and vague ill health. His FBC showed the following;

WBC 78,000 N 77 % L 5% M 1% E 5% B 2% ATYPICAL CELLS 10%

Hb 10 g/dL PLT 112,000/ μ L

1 State two probable diagnoses/disease this patient can have

(5)

2.2 State the expected blood picture findings of one of the diseases you mentioned in 2.1 above

(10)

2.3 The hospital is situated in a remote area and the clinician can take bone marrow aspirate (BMA) and trephine biopsy. But the hospital laboratory does not have facilities to perform BMA and trephine processing and staining. They want your advice on best methods to send bone marrow aspiration and biopsy to the general hospital which is 58 km away. State what information would you provide on best transport methods for the BMA and trephine?

(20)

2.4 Later he was transferred to a tertiary care centre. The serum uric acid levels performed in that laboratory showed markedly elevated results. Explain the reasons for this observation. (15)

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2.5 A special genetic marker was positive for this patient. State the sample you would send for genetic testing and the test that is performed on that sample. (10)

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2.6 At the tertiary care centre it was decided to perform stem cell transplantation to this patient. State the different sources of stem cells (10)

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2.7 State three important aspects in quality of stem cells (10)

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2.8 Mention three very important tests that should be performed when prepare a patient for stem cell transplantation (10)

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2.9 Mention three tests which are useful for the assessment of successful engraftment of bone marrow (10)

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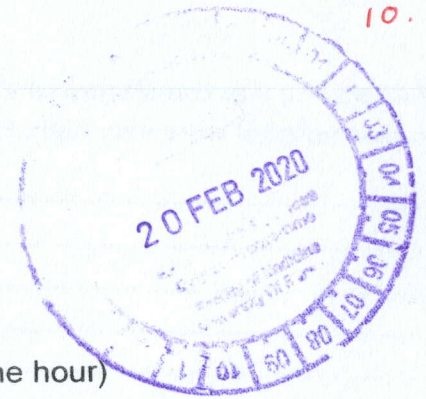
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Question 3

A 56 year old male presents with high fever with gum bleeding. He had hepatosplenomegaly.

His automated FBC report is given below

WBC 78,000 N 2 % L 30 % M 40 % ATYPICAL CELLS 28%

Hb 10 g/dL PLT 52,000/ μ L

3.1 State two probable diagnoses/disease this patient can have (5)

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3.2 State the expected blood picture findings for one disease you mentioned in 2.1 above (10)

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3.3 The hospital is situated in a remote area and the clinician can take bone marrow aspirate (BMA) and trephine biopsy. But the hospital laboratory does not have facilities to perform BMA and trephine processing and staining. They want your advice on best methods to send bone marrow aspiration and biopsy to the general hospital which is 58 km away. State what information would you provide on best transport methods for the BMA and trephine? (20)

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3.4 Later he was transferred to a tertiary care centre. The serum creatinine and SGOT/PT levels performed in that hospital were very high. Explain the reasons for this observation. (15)

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(15)

3.5 A special cytochemistry was positive for this patient. State the test and indicate the disease which gives a positive reaction to that test. (10)

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3.6 State briefly how you would classify the disease group mentioned in 3.5 above (20)

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3.7. He develops spontaneous bleeding from venesection sites. Patient had very high fever continuously. State the most likely diagnosis/condition which can lead to spontaneous bleeding in this patient (5)

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3.8 State three tests and expected findings which will show abnormal results in the condition you mentioned in 3.7 (15)

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