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

Year end examination Year 2 – September 2014
4th Batch - Theory - Haematology SEQ

Tuesday 2nd December 2014 Time: 10.15 am to 11..15 a.m. (one hour)

Instructions: **Index Number:** .....

(14)

Answer **two** questions. **Question No. 1 compulsory.**
Answer only one question from question numbers 2 & 3. Use only the space provided for answering.

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1. You are working in a haematology laboratory and you notice there are many samples rejected in haematology section which are received for FBC and BP.

1.1 Describe the "good quality sample" you are expected to receive at your laboratory for FBC (10)

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1.2 List five rejection criteria for FBC samples (10)

1.2.1 .
1.2.2 .
1.2.3 .
1.2.4 .
1.2.5 .

1.3 List five incorrect procedures/actions in pre analytical phase which compromise a sample for FBC (10)

1.3.1 .

1.3.2 .

1.3.3 .

1.3.4 .

1.3.5 .

1.4 State the principles used for FBC testing in five part automated haematology analyser. (10)

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1.5 Describe how you would classify anaemia based on red cell indices in automated FBC report (15)

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1.6 State the definition of anaemia. (10)

1.7 State the scientific basis of the definition of anaemia. (10)

1.8 Discuss briefly how you would ascertain accuracy of Hb values generated in automated analyser? (15)

1.9 State briefly how you would monitor IQC in haematology? (10)

2.

2.1 List the causes for primary haemostasis failure. (10)

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(13)

2.2List items necessary to perform bleeding time. (10)

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2.3 Describe briefly how you would differentiate defects of primary vs secondary haemostasis. (10)

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2.4 List items necessary to perform clotting time. (10)

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2.5 Describe briefly how you would perform clotting time test. (10)

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2.6 Draw the coagulation cascade indicating tests used to assess each pathway of coagulation. (20)

2.7 State the sample required for coagulation tests. (10)

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2.8 Discuss briefly the critical steps in coagulation testing which can affect test results starting from sample collection (20)

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3. Four patients A,B,C and D are given.

A	B	C	D
A 52 year old male	A 24 year old pregnant lady	A neonate - 1 day old	A child of 8 year age

3.1 If Hb is 13 g/dL who is/ are anaemic ? ..... (5)

3.2 If Hb is 19 g/dL who is/are normal ? ..... (5)

3.3 If Hb is 10 g/dL who is /are anaemic? ..... (5)

3.4 If Hb is 19 g/dL in patient A, and he has splenomagaly and frequent headaches what you would suspect ? (5)

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3.5 Indicate expected findings of the tests stated below in patient A as per the disease/condition you mentioned in **3.4.** above. (numerical values are not required)(15)

s.erythropoietin level .....

s.ferritin level .....

results of molecular genetic studies .....

3.6 While he is being investigated, he develops sudden paralysis in one side of the body and persisted with no improvement. State the most likely reason for this complication. (5)

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before start Warfarin therapy physician wants PT/INR done. The baseline PT/INR shows prolonged results. Explain the probable reason and describe the actions you would take to give accurate PT/INR test results. (20)

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3.8 What is the broad group of disorders this condition falls ? (5)

3.9 Briefly state common laboratory features of this group of diseases (10)

3.10 If a 5 year old child presents with Hb 18 g/dL, and cyanosis, what is the likely condition he is suffering from and explain briefly the basis for the Hb observed in this condition. (20)

3.11 State two different conditions which give rise to very high Hb in any individual other than the causes stated above. (5)

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

Year end examination Year 2 – September 2014
4th Batch - Theory - Haematology Essay
Tuesday 2nd December 2014 Time: 11.30 am to 12..30 a.m. (one hour)

(11)

Instructions:

Answer **two** questions. **Question No. 1 compulsory.**
Answer only **one** question **from questions 2 & 3**
Answer each question in separate booklets.

Question 1

Healthy bone marrow and many components are needed to maintain normal blood cells in circulation. Formation of blood cells requires many different components. Cells present in blood have different half life and destroyed in reticuloendothelial system.

1.1 List components necessary for normal blood cell production (10)

1.2 Radioisotope studies are useful to assess status of blood cell production and destruction. Describe briefly how these tests are utilized to ascertain marrow failure (underproduction) or excessive destruction. Support your description with graphs. (40)

1.3 Using a flow chart, indicate in step manner, starting from the most immature cell, in the correct order of sequence, the formation of neutrophils and red blood cells. (State the names of the cells/group of cells in each step). (20)

1.4 State briefly **three** (3) different changes occuring in haemopoiesis from intrauterine life to extrauterine life giving scientific basis for each. (30)

Question 2

2.1 Discuss laboratory diagnosis of lymphoproliferative diseases. (50)
2.2 Comment on laboratory contribution in stem cell transplantation. (50)

Question 3

3.1. Discuss causes for bad quality blood picture and how you would correct them. (50)
3.2. Discuss uses of red cell cytochemistry in diagnosis of haematological disorders. (50)