Charles Darwin University

Final Examination

Family Name						
Given Name/s						
Student Number						
Teaching Period	Semester 2, 2018					

MLS101 – Haematology 1	DURATION	
	Reading Time:	10 minutes
	Writing Time:	120 minutes

INSTRUCTIONS TO CANDIDATES

The examination has 2 sections.
Section A: 60 marks - Marks for each question are of equal value
Suggested Time: 60 mins
Multiple Choice Questions: Answer ALL (60) questions.

Section B: 40 marks
Suggested Time: 60 mins
Short Essay Questions: Answer ALL (10) questions

Total marks for this examination: 100

EXAM CONDITIONS

You may begin writing from the commencement of the examination session. The reading time indicated above is provided as a guide only.

This is a CLOSED BOOK examination

Any non-programmable calculator is permitted

No handwritten notes are permitted

No dictionaries are permitted

ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED
No additional printed material is permitted	1 x 16 Page Book 1 x 5-Multiple Choice Answer Sheet 2 x Scrap Paper

THIS EXAMINATION IS PRINTED DOUBLE-SIDED.

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Section B
Short Answer Questions
Total No of Marks for this Section: 40

This section should be answered in the Answer Booklet provided.

Marks for each question are indicated. Suggested time allocation for Section B: 60 mins

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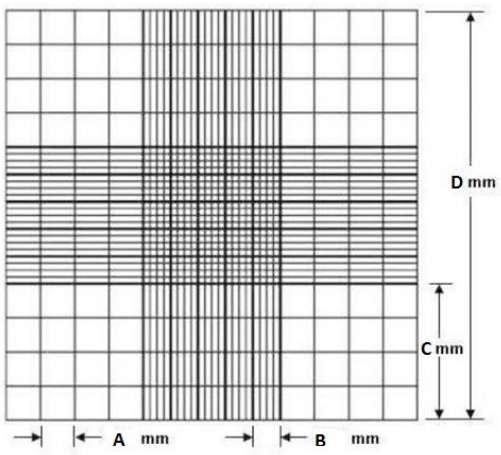
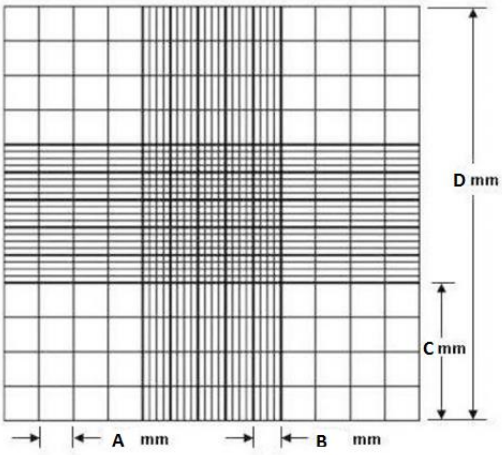
Question 1

The images below depict the counting grid of a haemocytometer. Show, by shading, which area(s) are used in the counting of white blood cells and red blood cells. Use a separate diagram for each cell type as labelled.



Counting white blood cells



Counting red blood cells

(Marks: 2)

Question 2

List three factors that are required for a good blood film.

(Marks: 3)

Question 3

You are given the following results:

RBC: 1.89×10^{12}/L
HGB: 7.5 g/dL
HCT: 21.0 %
RDW: 18.5

(a) Calculate the MCV, MCH and MCHC.

(Marks: 3)

(b) Describe the morphologic appearance of the red cells given your calculated values.

(Marks: 3)

(c) Based on the information above, how would you describe the anaemia status of the 25-year-old male?

(Marks: 2)

Question 4

Automation in haematology has several advantages over manual methods. Please give three examples for such advantages.

(Marks: 3)

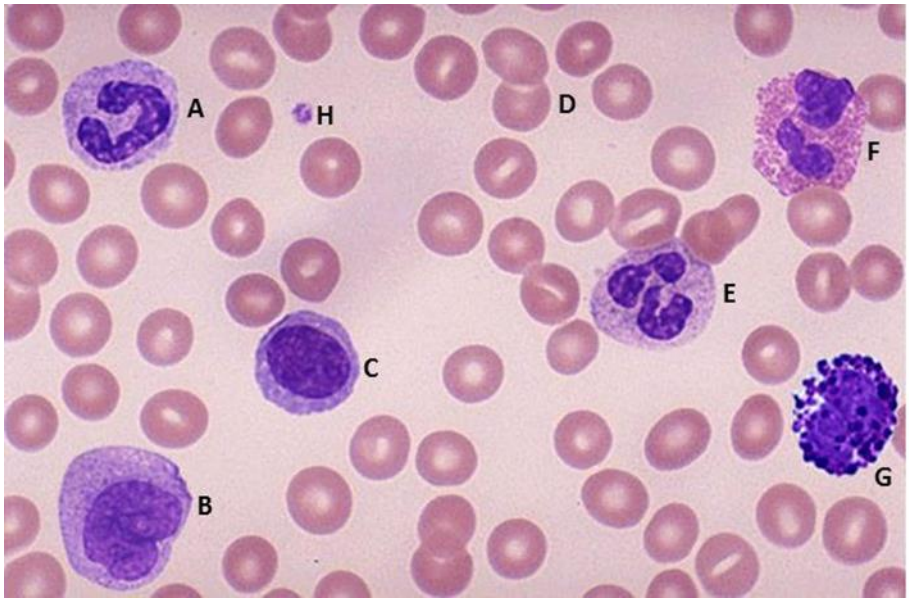
Question 5

Briefly explain the difference between plasma and serum.

(Marks: 2)

Question 6

Label the cell types (A-H) from the following blood smear.



A _____

B _____

C _____

D _____

E _____

F _____

G _____

H _____

(Marks: 8)

Question 7

Which is the worst pre-analytical error of all? Please explain why?

(Marks: 2)

Question 8

Haemolytic anaemias are caused by increased erythrocyte destruction due to intrinsic or extrinsic defects.

(a) Please explain the terms *intrinsic* and *extrinsic* in the context of haemolytic anaemia.

(Marks: 2)

(b) Please give two examples for intrinsic defects that can lead to haemolytic anaemia.

(Marks: 2)

(c) Please give two examples for extrinsic defects that can lead to haemolytic anaemia.

(Marks: 2)

Question 9

Haemostasis is a complex physiological process.

a) Briefly describe two key functions of haemostasis.

(Marks: 2)

b) Briefly describe the 2 phases of haemostasis.

(Marks: 4)