ПАМIBIА UПIVERSITY
OF SCIEПCE AПD TECHПOLOGY

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF HEALTH SCIENCES

QUALIFICATION: BACHELOR OF MEDICAL LABORATORY SCIENCES	
QUALIFICATION CODE: 08BMLS	LEVEL: 6
COURSE CODE: HAM621S	COURSE NAME: HAEMATOLOGY 2B
SESSION: JANUARY 2020	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION PAPER	
EXAMINER(S)	MAURICE NYAMBUYA
MODERATOR:	ELZABE VAN DER COLF

INSTRUCTIONS
1. Answer ALL the questions.
2. Write clearly and neatly.
3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Pen
2. Calculator

THIS QUESTION PAPER CONSISTS OF 4 PAGES (including this front page)

SECTION A [50]

QUESTION 1 [10]

Write short notes on the following terms;

1.1 Leukemoid reaction. (2)

1.2 Leukoerythroblastosis. (2)

1.3 Gaucher's disease. (2)

1.4 Neimann Pick disease. (2)

1.5 May-Hegglin anomaly. (2)

QUESTION 2 [15]

2.1 Tabulate the differences between T and B-cell lymphocytes. (8)

2.2 The heterophile antibody test (monospot) is used in the diagnosis of mononucleosis. Describe the test and state its principle. (7)

QUESTION 3 [25]

3.1 Name and describe the three phases of carcinogenesis. (6)

3.2 List and explain 5 characteristics that a disease must meet to be classified as malignant. (10)

3.3 State the Coulter principle and describe its use in haematology automation. (9)

SECTION B [50]

QUESTION 4 [25]

A 58-year-old man had been complaining of progressive tiredness for many months. Recently he had noticed that he was bruising easily and was experiencing night sweats. A physical examination by the doctor revealed that he had hypertension, a slight fever and an enlarged spleen. A full blood count, differential count and a LAP score test were requested.
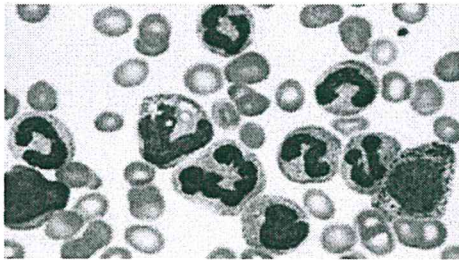
Full blood count

White Cell Count	20.6	$X10^9/l$
Red Cell Count	3.6	$X10^{12}/l$
Haemoglobin	10.8	g/dl
Platelets	600	$X10^9/l$

Differential count

Neutrophils	38%
Band cells	13%
Metamyelocytes	9%
Myelocytes	10%
Promyelocytes	2%
Eosinophils	1%
Basophils	1%
Lymphocytes	21%
Monocytes	3%
Blasts	2%
Nucleated red blood cells	15%

Peripheral blood smear

4.1   Correct the white cell count (show all calculations) (4)

4.2   The total cell numbers were as follows; A=90 ; B=5; C=3;D=2 and E=0. Calculate the LAP score (show all calculations). (7)
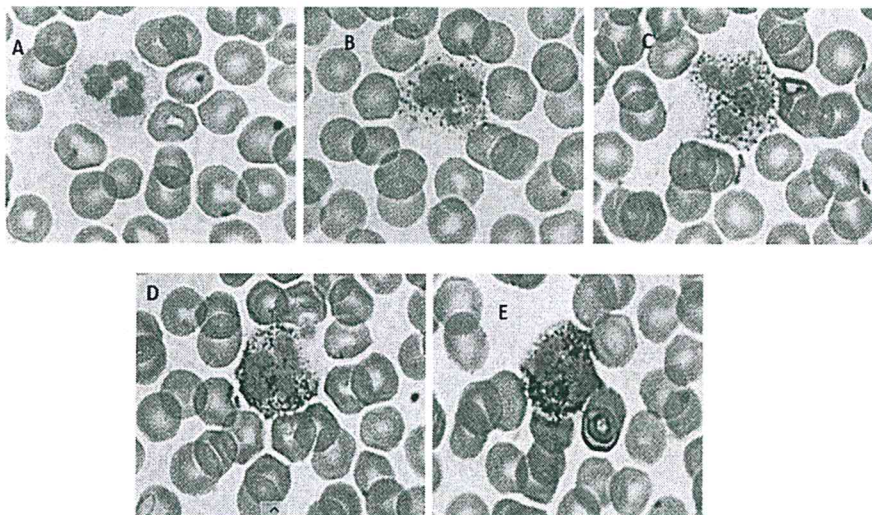
4.3 Based on your LAP score above, what is most likely to be the diagnosis for this patient? (2)

4.4 Name other condition in which the LAP score is useful and the expected score value. (2)

4.5 What other further test will do to confirm the diagnosis in 4.3. (10)

QUESTION 5 [25]

5.1 List 6 categories in which the World Health Organisation (WHO) classified myelodysplastic syndrome into. (6)

5.2 Of the MDS classification you have listed above, which category is most likely to progress into acute myeloid leukaemia. Motivate your answer. (4)

5.3 Discuss the pathogenesis, clinical findings as well as laboratory results of chronic myelomonocytic leukaemia (CMML). (12)

5.4 What disorder is CMML classified as according to the WHO? Explain the rationale behind this classification. (3)

End of Examination

Total Marks: [100]

Good Luck!