



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF HEALTH SCIENCES

QUALIFICATION : MEDICAL LABORATORY SCIENCES	
QUALIFICATION CODE: 08BMLS	LEVEL: 5
COURSE CODE: IML511S	COURSE NAME: INTRODUCTION TO MEDICAL LABORATORY SCIENCES
SESSION: JUNE 2019	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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INSTRUCTIONS
<ol style="list-style-type: none">1. Answer ALL the questions.2. Write clearly and neatly.3. Number the answers clearly.4. Graph paper included

PERMISSIBLE MATERIALS

1. Pen
2. Non-programmable Calculator

THIS QUESTION PAPER CONSISTS OF 6 PAGES (Including this front page)

SECTION A (46 MARKS)

QUESTION 1

[10]

Evaluate the statements in each numbered section and select the most appropriate answer or phrase from the given possibilities. Write the appropriate letter next to the number of the statement/phrase.

- 1.1 Which of the following best describes a Medical Laboratory scientist? (1)
- A) They treat patients
 - B) Perform point of care tests
 - C) Ensure patient's care during hospital stay
 - D) Provide important information that contribute to patient care
- 1.2 The following are all components of the pre-analytical phase except: (1)
- A) Loading patient onto the analyzer
 - B) Sorting specimens
 - C) Centrifuging of specimens
 - D) Logging of specimens onto the LIS
- 1.3 Patient information on sample and request form should always be... (1)
- A) Complete
 - B) Accurate
 - C) Identical
 - D) All of the above
- 1.4 Identify the best description of ethics. (1)
- A) The correct way to do things
 - B) A set of rules to make life run smoothly
 - C) A set of standards by which a certain profession practice
 - D) Law's passed by government to ensure order in a country
- 1.5 The total volume of blood in an adult is: (1)
- A) 10% of total body weight
 - B) About 6 liters
 - C) 45% of all fluids
 - D) Half of body weight

1.6 All of the following cells stem from the myeloblast stem cell except: (1)

- A) Red cells
- B) Platelets
- C) Lymphocytes
- D) Neutrophils

1.7 A fire breaks out due to an overloaded electrical circuit. Classify the fire. (1)

- A) Class A
- B) Class B
- C) Class C
- D) Class D

1.8 What does the following sign depict? (1)



- A) The material is of a corrosive nature
- B) Dangerous chemical
- C) The material has potential to cause fire
- D) The material is acidic

1.9 Which sample is most suitable for testing coagulation function? (1)

- A) Serum
- B) Plasma
- C) Whole blood
- D) Red cells

1.10 Which of the following is an enzyme? (1)

- A) Bilirubin
- B) Cholesterol
- C) Triglyceride
- D) Creatinine Kinase

QUESTION 2

[10]

Assess the following statements and decide whether they are true or false. Write only the number of the question and TRUE for a true statement and for false statement. If you decide a statement is false, provide the correct statement.

- 2.1 Quality control is most important during the pre-analytical phase.
- 2.2 You can mouth pipette, along as you are careful about it.
- 2.3 An individual with group AB positive may receive blood transfusion from group A, B and O individuals.
- 2.4 You may discard a request (sample and form) if the names do not match.
- 2.5 All bacteria isolated from patient samples are pathogenic.
- 2.6 Whole blood may be stored frozen.

QUESTION 3

[10]

For each of the following terms. Demonstrate the meaning of the root, prefix or suffix in the following terms. E.g. **Haemolysis: Haem- Blood & Lysis-Breaking down**

- 3.1 Myeloblast (2)
- 3.2 Cardiology (2)
- 3.3 Dysuria (2)
- 3.4 Erythropoiesis (2)
- 3.5 Splenectomy (2)

QUESTION 4**[16]**

- 4.1 Match the phrase in column A to the appropriate discipline in column B. (10)
discipline may match more than one phrase:

COLUMN A	COLUMN B
4.1.1 Viral load	A) Haematology
4.1.2 Gram stain	B) Clinical Chemistry
4.1.3 Urea and electrolytes	C) Microbiology
4.1.4 Antibiotic susceptibility	D) Molecular Diagnostics
4.1.5 Chemiluminescence	E) Immunochemistry's
4.1.6 Nucleic acids	
4.1.7 Renal Function	
4.1.8 Hemostasis	
4.1.9 Thermocyclers	
4.1.10 Agglutination	

- 4.2 Suggest two applications of molecular diagnostics in a medical laboratory. (6)

SECTION B (54 MARKS)**QUESTION 5****[24]**

- 5.1 There are 3 major roles a medical scientist plays in the health system, briefly describe them. (6)
- 5.2 Briefly outline the differences between HPCNA and the NAMLS. (6)
- 5.3 Discuss the four major core principles that Medical Ethics are based on. (12)

QUESTION 6**[13]**

- 6.1 Explain how the microscope achieves magnification using the magnification system. (8)
- 6.2 How can one ensure safety when using a centrifuge? (5)

QUESTION 7

[17]

Quality can be defined as the assurance that a product or service meets the expected standard or is of worth. With this in mind, answer the following questions:

- 7.1 In a medical laboratory, what are some ways that indicate the quality of the laboratory service? (4)
- 7.2 Using the following information, calculate the SD levels and plot the Levy Jennings chart for the last two weeks of May 2019. (use graph paper provide) (10)

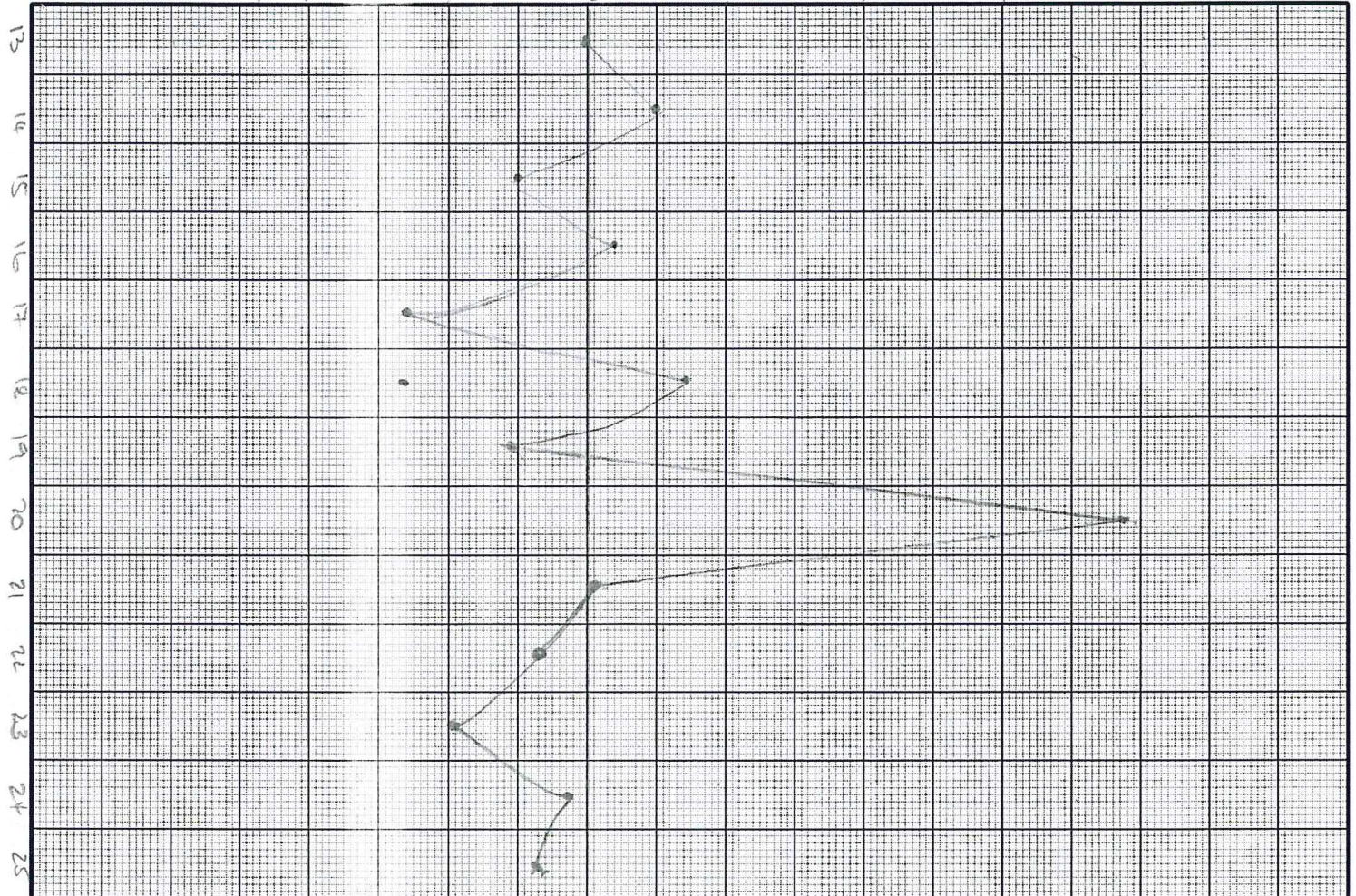
Day	13	14	15	16	17	18	19	20	21	22	23	23	24	25
Chol	200	205	195	202	186	207	194	239	200	196	190	204	190	196

**The control mean is 200mg/dL
SD=10**

- 7.3 Identify a westgard violation on the chart and suggest action for the run. (3)

(TOTAL MARKS 100)

1300
-25
170
140
180
-250
190
-150
200
Vaccin
+150
210
+250
220
230
+350



Nov 2019