



**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: JULY 2019	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SUPPLEMENTARY/ SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Ms EDWIG HAUWANGA
MODERATOR:	Ms VANESSA TJIJENDA

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 provided	

PERMISSIBLE MATERIALS

1. Pen
2. Non-programmable Calculator

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

SECTION A (42 MARKS)

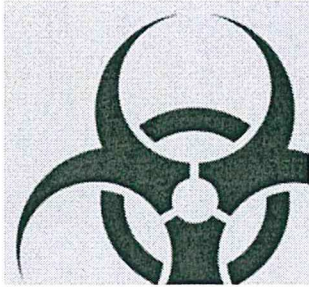
QUESTION 1

[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 duties is not part of Medical Laboratory Scientist's Job description? (1)
- A) Run assays on analyzers
 - B) Administer subordinate's payroll
 - C) Troubleshoot QC
 - D) Supervise Technicians
- 1.2 Identify the post analytical component from the list below. (1)
- A) Logging specimens onto the LIS
 - B) Retrieving results from LIS
 - C) Analyzer interfacing results to the analyzer
 - D) Daily QC plotted onto the Levy Jennings Chart.
- 1.3 Identify the discipline aimed more at therapeutic rather than diagnostic purpose? (1)
- A) Immunohaematology
 - B) Immunochemistry
 - C) Clinical Chemistry
 - D) Molecular Diagnostics
- 1.4 A visible antibody/antigen reaction is known as: (1)
- A) Aggregation
 - B) Clotting
 - C) Agglutination
 - D) Sensitization
- 1.5 A microtome is used for.....tissues: (1)
- A) Embedding
 - B) Fixing
 - C) Viewing
 - D) Slicing

1.6 The following safety sign demonstrates: (1)



- A) A biological hazard
- B) A fire hazards
- C) A mechanical hazard
- D) A radioactive hazard

1.7 Which of the following protect the worker, the product and the laboratory environment from biohazards? (1)

- A) Class I
- B) Class II
- C) Class III
- D) All of the above

1.8 Bioethics gives special attention to..... (1)

- A) Negligence
- B) Malpractice
- C) Informed consent
- D) Treatment of patients

1.9 Identify the correct order of draw for blood samples? (1)

- A) Blood culture, light blue, red and yellow
- B) Blood culture, yellow, red and light blue
- C) Red, yellow, light blue, blood culture
- D) Yellow, red, light blue and blood culture

1.10 On the visible light spectrum, red is in which nanometer range? (1)

- A) 380-440nm
- B) 500-580nm
- C) 600-620nm
- D) 620-750nm

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 the statement is false, provide the correct statement.

- 2.1 Centralization is the process of taking laboratory services to the people, unlike your traditional set up where laboratory is confined in a health facility
- 2.2 An O positive can receive blood from an A positive because they do not have any antigens
- 2.3 Ethics and etiquette are the same thing.
- 2.4 DNA first must be multiplied into millions of copies before it can be detected.
- 2.5 Haemolysed specimens can yield falsely elevated potassium levels.
- 2.6 When there is a 1_2S violation, one should reject the run.

QUESTION 3

[10]

Briefly describe the principle of following techniques:

- 3.1 Spectrophotometry (2)
- 3.2 Centrifugation (2)
- 3.3 Microscopy (2)
- 3.4 Chemiluminescence (2)
- 3.5 Bacterial Culturing (2)

QUESTION 4

[12]

- 4.1 A patient came into the phlebotomist's office and she drew the following samples: 2 yellow tubes, 1 purple tube, 1 light blue tube, blood culture bottle. Complete the following table: (12)

Order of Draw	Preservative/Anticoagulant	Designated Department

SECTION B (58 MARKS)

QUESTION 5

[25]

The local newspaper advertised a vacancy for a Medical Laboratory Scientist position at Vision Laboratories for their Anatomical Pathology, specifically histology.

- 5.1 What competencies and qualifications should this individual possess? (6)
- 5.2 The day to day work of this scientist will be processing tissues, describe the steps/processes involved in this task (12)
- 5.3 It is very important that this scientist observes all the safety rules for the protection of others and themselves. What are some of the ways he/she can they ensure general safety in the laboratory? (7)

QUESTION 6

[18]

- 6.1 What does the picture below illustrate? (9)



- 6.2 Explain the difference between a shift, trend and a bias and for each, suggest a possible cause. (9)

QUESTION 7

[15]

- 7.1 You are provided with a standard that has a concentration of 150mg/dL, its absorbance reading on the spectrophotometer was 0.240. Predict the rest of the concentrations of the unknown samples using the following absorbance readings and draw the standard curve using the results. Show the formula used. (12)

Absorbance	0.100	0.150	0.200	0.250	0.300	0.350
Concentration						

- 7.2 Mention few causes of deviation from Beer's Law. (3)

(TOTAL 100 MARKS)