UNIVERSITY OF JAFFNA
FACULTY OF ALLIED HEALTH SCIENCES
THIRD YEAR SECOND SEMESTER EXAMINATION IN BScHons (MLS) -2021
MLSLR3213 LABORATORY MANAGEMENT AND RECORD KEEPING

Date: 16.10.2023

Time: 2 Hours

ANSWER ALL EIGHT QUESTIONS.
ANSWER EACH PART IN SEPARATE ANSWER BOOKS

PART A

1. The External Quality Assessment (EQA) report of the cholesterol received from a clinical laboratory is given below. The Internal Quality Control (IQA) report of cholesterol shows the Mean and Standard deviation of 179.95 and 2.80, respectively. The Total Allowable Error (TEa) of cholesterol of the above laboratory is set up as ± 10%.

EQA report of creatinine from January to November 2022

Month	Mean of comparison	Lab result
January	292.371	284
February	111.466	112
March	156.201	156
April	298.366	293
May	194.045	185
June	293.836	288
July	156.02	152
August	289.135	286
September	164.908	162
October	296.215	290
November	193.548	194

1.1. Define "Quality Assurance" (10 Marks)

1.2. State the consequences of producing inaccurate clinical laboratory reports. (20 Marks)

1.3. Estimate the following quality indicators of cholesterol for the above laboratory.

    1.3.1. Total % Bias (20 Marks)

    1.3.2. Precision (20 Marks)

    1.3.3. Sigma value (20 Marks)

1.4. State how you would choose the most suitable Westgard QC rules for cholesterol to the above laboratory (the Westgard Sigma Rule table is given below)

(10 Marks)

Sigma	Westgard rules	Levels of control	Measurements	p error detection	P false rejection
6.0	$1_{3.5s}$	2	1	0.98	0.01
5.8	$1_{3.5s}$	2	1	0.98	0.00
5.6	1_{3s}	2	1	0.97	0.00
5.4	1_{3s}	2	1	0.94	0.00
5.2	1_{3s}	2	1	0.91	0.00
5.0	$1_{2.5s}$	2	1	0.96	0.03
4.8	$1_{2.5s}$	2	1	0.93	0.03
4.6	1_{3s}	2	1	0.92	0.01
4.4	$1_{2.5s}$	2	1	0.96	0.04
4.2	$1_{2.5s}$	2	1	0.92	0.04
4.0	$1_{3s}/2\,2_{2s}/R\,4_s/4\,1_s$	2	2	0.91	0.03
3.8	$1_{3s}/2\,2_{2s}/R\,4_s/4\,1_s$	2	2	0.86	0.03
3.6	$1_{3s}/2\,2_{2s}/R\,4_s/4\,1_s$	2	2	0.79	0.03
3.4	$1_{3s}/2\,2_{2s}/R\,4_s/4\,1_s$	2	2	0.65	0.03
3.2	$1_{3s}/2\,2_{2s}/R\,4_s/4\,1_s$	3	2	0.48	0.03
3.0	$1_{3s}/2\,2_{2s}/R\,4_s/4\,1_s$	3	2	0.36	0.02

Source: Schoenmakers CHH, Naus AJM, Xvermeer HJ, Loon DV and Steen5 G, Practical application of Sigma Metrics QC procedures in clinical chemistry. Clin Chem Lab Med 2011;49(11):1837–1843

2. Write notes on

2.1. Occurrence management in a clinical laboratory. (30 Marks)

2.2. Random and Systematic errors in clinical laboratories. (30 Marks)

2.3. Quality system essentials of a quality management system model. (40 Marks)

3.

3.1 Describe the different service models of clinical laboratories. (40 Marks)

3.2 Briefly describe the importance of a clinical laboratory. (30 Marks)

3.3 Discuss the advantages of keeping inventory in a clinical laboratory. (30 Marks)

4.

4.1 Name two international accreditation bodies. (10 Marks)

4.2 Describe two international standards that can be used for the accreditation of the laboratories. (40 Marks)

4.3 Briefly describe on Laboratory Management information system (LIMS) (50 Marks)

PART B

5.

5.1 What do you understand by the term 'management'? (20 Marks)

5.2 State why management is considered as a 'social process'. (20 Marks)

5.3 Explain how middle-level management differs from top-level management in terms of their duties and decision-making authority. (30 Marks)

5.4 Explain why it is important for a manager to serve as a figurehead. (30 Marks)

6.

6.1 What is meant by the term 'planning'? (20 Marks)

6.2 State why planning is considered to be the most important management function.

(20 Marks)

6.3 Differentiate between 'corporate planning' and 'functional planning'. (30 Marks)

6.4 Explain how contingency planning helps organizations prepare for
unexpected events and mitigate potential risks? (30 Marks)

7.

7.1 What do you understand by the term 'Information system'? (20 Marks)

7.2 State why managers should stay updated with the latest developments in
information systems. (20 Marks)

7.3 Explain how information system supports business processes and operations. (30 Marks)

7.4 Briefly explain the advantages of using e-business applications for companies. (30 Marks)

8.

8.1 What is meant by the term 'records management'? (20 Marks)

8.2 State why it is important for organizations to justify the creation and retention of records.

(20 Marks)

8.3 Explain any five characteristics of good filing system. (30 Marks)

8.4 Briefly explain the factors that should be considered when purchasing filing equipment.

(30 Marks)