NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

SORS 2106

FACULTY OF APPLIED SCIENCES

DEPARTMENT OF STATISTICS AND OPERATIONS RESEARCH

SORS 2106: MONITORING AND EVALUATION

BSc. Operations Research and Statistics and Business Analytics: Part II

DECEMBER 2024 EXAMINATION

Time : 3 hours

Candidates should attempt **ALL** questions from Section A and **ANY THREE** questions from Section B. Each question should start on a fresh page

SECTION A: Answer all questions in this section (40 marks).

A1. With reference to monitoring and evaluation, define the following terms:

(a) Indicator [1]

(b) Outcome. [1]

(c) Baseline. [1]

(d) Pilot Testing. [1]

(e) Stakeholder. [1]

A2. (a) What are the differences between Monitoring and Evaluation. [5]

(b) What is a Monitoring and Evaluation plan? state its importance. [3]

A3. (a) Distinguish between types of data used in Monitoring and Evaluation and the methods of collecting them. [4]

(b) What are the factors to be considered when choosing the appropriate data collection method for monitoring and evaluation. [4]

A4. Explain what is Data Quality Audit and give a Step by Step process of how a data quality Audit is conducted? [5]

A5. What is the relationship between Key Performance Indicators and data collection tools?. [4]

A6. (a) Differentiate between open-ended and closed-ended questions. [2]

(b) What steps should be followed when designing a good questionnaire?. [8]

SECTION B: Answer any THREE questions in this section (60 marks).

B7. (a) Define the Monitoring and Evaluation framework relating it to a program of your own choice. [4]

(b) Supposing your organisation working in partnership with UNICEF on a program to improve under five mortality in Zimbabwe. You are the Monitoring and Evaluation officer and are tasked with drafting a logic model framework for the project.

(i) What are the components that you would include in the logic model ?. [4]

(ii) Draft the Monitoring and Evaluation framework for the project explaining how you would use it to monitor as well as evaluate the project impact. [12]

B8. (a) Give the Step by Step process in **developing** and **implementing** a Monitoring and Evaluation System . [12]

(b) Key Performance Indicators (KPIs) are an important means to measure progress in the implementation of a Project. Without Key Performance Indicators (KPIs) it is difficult to track progress in the Implementation of a Project.

(i) List the two (2) ways Key Performance Indicators can be developed. [2]

(ii) For each way, provide a Step by Step process on how Key Performance Indicators are developed. [6]

B9. (a) What is baseline survey? [2]

(b) Why is it important to conduct a baseline survey? [3]

(c) Mention the routine and non-routine indicators for any project. [3]

(d) Your organisation was involved in a livelihoods program in Matobo district in Matabeleland South. The main objective of this program was to improve the maize yield harvested by participants through training them in conservation farming (gantshompo). The monitoring and evaluation team conducted a baseline survey using seven participants and gathered data on the average maize yield per household at the inception of the program. After the intervention data was collected on the average maize yield per household for the same sample used at program inception. The results in tonnes of both the baseline and the end-line surveys are presented in the following table:

Table 1: Baseline and End-line Survey Results

Baseline	210	180	195	220	231	199	224
Program End	193	186	186	223	220	183	233

Using an appropriate test evaluate and conclude about the effectiveness of the livelihoods program. Use $\alpha = 0.05$. [12]

B10. (a) What are Parametric and Non parametric Hypothesis tests? [2]

(b) Briefly explain giving examples of any non-parametric tests you know stating what they seek to assess. [6]

(c) Use the Kruskal-Wallis test. Listed below are amounts of arsenic in samples of brown rice from three different states. The amounts are in micrograms of arsenic and all samples have the same serving size. The data are from the Food and Drug Administration. Use a 0.01 significance level to test the claim that the three samples are from populations with the same median. [12]

Table 2: Amounts of Arsenic in Brown rice

Arkansas	4.8	4.9	5.0	5.4	5.4	5.4	5.6	5.6	5.6	5.9	6.0	6.1
Carlifonia	1.5	3.7	4.0	4.5	4.9	5.1	5.3	5.4	5.4	5.5	5.6	5.6
Texas	5.6	5.8	6.6	6.9	6.9	6.9	7.1	7.3	7.5	7.6	7.7	7.7

END OF QUESTION PAPER