

NATIONAL UNIVERSITY OF LESOTHO
ES 4303-PROJECT PLANNING AND IMPLEMENTATION FOR
ENVIRONMENTAL SCIENCE

B.Sc./BA Supplementary Examinations

August 2023

Marks: 100

TIME: 3 HOURS

QUESTION ONE

A small nuclear power plant is considered for a small town of Roma, the overall cost of the plant is M 80,000. It is predicted that this plant will generate 5000 kilowatts per hour for a period of 5 years. Realeboha construction company accepts a discount rate of 15%. Use the information below to:

Year	Social costs(M)		Social Benefit(M)	
1	8000		6000	
2	10000		8000	
3	5000		3000	
4	5000		3000	
5	5000		2000	
6	4500		4000	

- (a) Determine the Net Present Value (NPV) of the project and the cost-benefit ratio (CB)(the discount factors must be rounded to 2 decimal points) [12]
- (b) Advice on whether this project is socially beneficial or not using a Benefit cost decision rule [3]
- (c) Explain one disadvantage of cost-benefit analysis in appraising public sector projects [5]
- (d) Explain one importance of the benefit-cost analysis in appraising public sector projects [5] [25]

QUESTION TWO

With the aid of examples, describe how you would use a project logical framework to assess the success or failure of the project.

[25]

QUESTION THREE

‘The project manager will; need to understand the various characteristics of the environment in which the project is going to take place, and be able to develop strategies for dealing with it in order to enhance the chances of the project success’.

Discuss the four components of the project environment, and provide examples of where each could contribute to the success or failure of the Project. [25]

QUESTION FOUR

Explain the difference between environmental intangible benefits and costs AND tangible benefits and costs. In your answer, explain how intangible benefits and costs might be measured and/or quantified. Support your answer with appropriate illustrations and/or examples from your reading. [25]

QUESTION FIVE

1. Differentiate between project feasibility and project appraisal (5)
2. What does it mean to say a project is a unique and temporary undertaking by any organisation? (10)
3. What does it mean to say a project is a time-bound investment aimed at creating productive assets (5)
4. What is the difference between projects and programmes? (5) [25]

QUESTION SIX

Egoli oil refineries have recently issued a statement that the oil drilling machines at their main oil refinery plant in Khohlo Nts' o broke down. And they need to be replaced with new ones. The new drilling machines require an initial investment of M15 Million. The investment is expected to run for a period of 6 years. And in the first year, the net cash inflow is 2 million, it then increases by 6 % in years 2 and 3. And by 5% in years 4 and 5. Egoli accepts a 15% discount rate for these generators.

- a) Prepare a Table that shows the expected cash-flow pattern of the above investment [12]
 - b) Find the Net Present Value of this new investment [**round the discount factors to 2 decimal points**]. [8]
 - c) With reference to the answer in(b) would you advise Egoli to invest in this project or not, and why. [5]
- [25]