

BINDURA UNIVERSITY OF SCIENCE EDUCATION  
FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE  
DEPARTMENT: NATURAL RESOURCES  
PROGRAMME: NRM and SHEM

COURSE CODE ES413 (1) PROJECT PLANNING AND MANAGEMENT

DURATION: 2hrs

TOTAL MARKS: 70

INSTRUCTIONS TO CANDIDATES

Answer THREE questions out of the following five questions. You must answer question ONE from SECTION A and any TWO questions from SECTION B.

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**SECTION A (COMPULSORY)**

1. (a) Your firm is trying to decide whether to invest in a new project opportunity based on the following information. The initial cash outlay will total \$250,000 over two years. The firm expects to invest \$200,000 immediately and the final \$50,000 in one year's time. The company predicts that the project will generate a stream of earnings of \$50,000, \$100,000, \$200,000, and \$75,000 per year, respectively, starting in Year 2. The required rate of return is 12%, and the expected rate of inflation over the life of the project is forecast to remain steady at 3%. Should you invest in this project? [15 Marks]
- (b) Describe the basic elements of a project life cycle. [15 Marks]

## SECTION B

- 2(a) Consider the following information in choosing among the four project alternatives below (labeled A, B, C, and D). Each has been assessed according to four criteria: Payoff potential, Risk, Safety, and Competitive advantage
- Project A is rated: Payoff potential: high, Safety: high, Risk: low And Competitive advantage: medium
- Project B is rated: Payoff potential: low, Safety: medium, Risk: medium Competitive advantage: medium. Project C is rated: Payoff potential: medium, Safety: low, Risk: medium Competitive advantage: low. Project D is rated: Payoff potential: high, Safety: medium, Risk: high, Competitive advantage, medium.
- Construct a project checklist model for screening these four alternatives. Based on your model, which project is the best choice for selection? Why? Which is the worst? Why? [10 Marks]

- (b) Suppose the information in 2(a) was supplemented by importance weights for each of the four assessment criteria, where 1 = low importance and 3 = high importance:

Assessment Criteria Importance Weights

1. Payoff potential 3
2. Lack of risk 3
3. Safety 1
4. Competitive advantage 3

Assume, too, that evaluations of *high* receive a score of high 3, *medium* 2, and *low* 1. Recreate your project scoring model and reassess the four project choices (A, B, C, and D). Now which project alternative is the best? Why? [10 Marks]

- 3 As a consultant, advice a functional organization that is seeking to move from an old, adversarial culture, where the various departments actively resisted helping one another, to one that encourages "project thinking" and cross-functional cooperation. [20 Marks]

4. The table below shows the risk factors and their likelihood of occurrence.

Identified Risk Factors	Likelihood
Key team members pulled off the project	High
Chance of economic downturn	Low
Project funding cut	Medium
Project Scope	High
Poor spec. performance	Low

- (a) Based on the table above:

(i) Rate and justify the consequence of each risk factor. [5 Marks]

(ii) Construct the risk matrix and classify each of the risk factors in the matrix. [5 Marks]

- (b) Explain the mitigation measures that can be used to reduce risks faced by this project. [10 Marks]

5. (a) You are calculating the estimated time to completion for a project of 15 months' duration and a budgeted cost of \$350,000. Assuming the Planned Value (PV) is 65 000 and The Earned Value (EV) is 58 000, calculate

(i) Schedule Performance Index [5 Marks]

(ii) Estimated time to completion [5 Marks]

- (b) Assume you have collected the following data for your project. Its budget is \$75,000 and it is expected to last four months. After two months, you have calculated the following information about the project:

PV = \$45,000

EV = \$38,500

AC = \$37,000

(i) Calculate the Schedule Performance Index (SPI) and Cost Performance Index (CPI). [5 Marks]

(ii) Based on these values, estimate the time and budget necessary to complete the project. [5Marks]

**End of Paper**