



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF THE BUILT ENVIRONMENT

DEPARTMENT OF CONSTRUCTION MANAGEMENT

PROJECT COST AND FINANCIAL MANAGEMENT

BCM 5103

Main Examination Paper

November, 2024

This examination paper consists of 3 pages

Time Allowed: 3 hours

Total Marks: 100

Examiner's Name: Mabhayila R.

INSTRUCTIONS

1. Use of calculators is permissible
2. Answer any four (4) Questions

MARK ALLOCATION

QUESTION	MARKS
1.	25
2.	25
3.	25
4.	25
5.	25

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Question One

- a. Distinguish the known-unknowns from unknowns-unknowns. (5 marks)
- b. Explain the accuracy of Funding Limit Reconciliation and Cost Aggregation techniques in developing budgets. (20marks)

Question Two

Discuss the accuracy of the following estimating methods as applied in construction project management-

- a. Expert Judgement. (5marks)
- b. Analogous. (5marks)
- c. Vendor-bid. (5marks)
- d. 3-Point Estimating. (5marks)
- e. Bottom-up. (5marks)

Question Three

- a. Explain the key challenges with cost management (10 marks)
- b. You are project manager responsible for the fancy birdhouses project. Two (2) birdhouses must be built a month for 12 months. Each birdhouse is planned to cost \$1000.00. Your project is scheduled to last for 12 months. It is the beginning of month 10. You have built 20 birdhouses and the Cost Performance Index is .9091. Required to do the following-
 - i. Comment on the project performance up to date. (2marks)
 - ii. Determine the actual cost of the project. (2marks)
 - iii. Assuming that the COST variance experienced so far in the project will continue, how much more money will it take to complete the project. (2marks)
 - iv. If the variance experienced so far were to stop, calculate the project's estimate at completion. (2marks)
 - v. Calculate the project's To Complete Performance Index using the project's budget at completion. (2marks)
 - vi. Senior management wants to know the percentage of the project that is complete. Determine the percentage completion of the project. (2marks)
 - vii. Imagine if instead of 10 months and costing \$2200, the project was in month three and costing \$4000. Indicate and explain the formula that you might use for Budget at Completion. (3marks)

Question Four

- a. Explain the purpose of a management reserve (5marks)
- b. Discuss the adequacy of cost estimating inputs when estimating the project cost (20marks)

Question Five

The client has the option of investing in one of the following projects-Project A and Project B, Project C and Project D. The required rate of return is 12%. If the projects are mutually exclusive which project would you recommend using the following investment appraisal techniques-?

- i. Payback period method (5marks)
- ii. Discounted Payback period (5marks)
- iii. Net Present Value (5marks)
- iv. Internal Rate of Return (5marks)
- v. Profitability Index (5marks)

Year	Project A	Project B	Project C	Project D
0	(10,000)	(15,000)	(20,000)	(40,000)
1	4,000	4,500	10,000	-
2	4,000	4,500	10,000	-
3	4,000	4,500	4,000	100,000
4	1,000	4,500	2,000	120,000
5	-	4,500	-	60,000

END OF EXAMINATION