

KATHMANDU UNIVERSITY
End Semester Examination
February, 2025

Marks Scored:

Level : B.Arch.

Year : IV

Exam Roll No. :

Time: 30 mins.

Registration No.:

Course : CIEG 403

Semester : I

F. M. : 10

Date

: 25 FEB 2025

SECTION "A"

[20Q. × 0.5 = 10 marks]

Choose the most appropriate answer and **encircle**.

1. In the feasibility study of a project Return on Investment (ROI) is calculated which is :
 - a. An economic study.
 - b. A Market study.
 - c. An appraisal of a project.
 - d. A financial study.

2. When a project crashes, the direct cost of the project increases mainly due to:
 - a. Resources have to be used in shifts.
 - b. Procurement of materials is in bulk.
 - c. The number of subcontractors is increased.
 - d. Increase in salary of employees.

3. Before preparing the CPM Network, we need to calculate/ estimate the time required for a task for which we need a quantity of a task, productivity of one resource, and:
 - a. Number of resources to be allocated.
 - b. Types of resources.
 - c. Required skill of resource.
 - d. Cost of resources.

4. If the personal assets of the owners are used to pay the debt of their organization, it is called:
 - a. Current liability
 - b. Limited liability
 - c. Share capital
 - d. Unlimited liability

5. The span of control in an organization means:
 - a. Number of personnel controlled by a manager
 - b. Group of persons in one unit
 - c. How communication is controlled
 - d. How authority is controlled

6. A Quality Assurance Plan (QAP) for a construction project is prepared by:
 - a. Consultant during the planning stage
 - b. Project Manager at the beginning
 - c. Contractor before construction
 - d. Engineer before construction

7. Specification can be defined as a set of requirements to be satisfied by the designs, materials, products, or services. The set of requirements should be:
 - a. Implied needs
 - b. Logical in nature
 - c. Of highest standard
 - d. Explicit in nature

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8. A bidder withdrew his bids 25 hours before the bid submission date and time. On the opening day of the bids, you would:
 - a. Return the bid unopened.
 - b. Not return the bid.
 - c. Return the bid but forfeit the bid security.
 - d. Retain the bid for further evaluation
9. Following is not the responsibility of an Engineer.
 - a. To recommend a certificate of payment (bill).
 - b. To enforce the contract.
 - c. To approve variations & and make payment
 - d. To interpret contract.
10. If in Earned Value Analysis (EVA), the Schedule Performance Index (SPI) is less than 1.0 then the project is:
 - a. Over budgeted
 - b. Ahead of schedule.
 - c. On the schedule.
 - d. Behind the schedule.
11. If you must do the casting of RCC for a pavement of thickness of 200mm, you will choose the following vibrator
 - a. Needle Vibrator.
 - b. Plate/ surface Vibrator.
 - c. Temping Rammer / Monkey Jumper.
 - d. Hand roller.
12. Iso-Risk curves if plotted, you as a project manager can know:
 - a. Relative importance of each risk.
 - b. Relative management of risks.
 - c. Impact of risks only.
 - d. Probability of occurrence of risks.
13. The mixer of the Read-mix concrete (RMC) can pump concrete up at the site to the height of:
 - a. 60m.
 - b. 70m.
 - c. 80m.
 - d. 90m.
14. Liquidated damage has been accumulating due to the inability of contractor to complete the construction project. How long would you allow the contractor to continue the construction?
 - a. Depends upon the progress
 - b. Till accumulation 15%.
 - c. Till s/he completes the construction.
 - d. Till accumulation up to 10%.
15. Following issue may also lead to the claim and dispute in construction:
 - a. Amicable settlement.
 - b. Quality beyond specification.
 - c. Ambiguity and loophole in contract.
 - d. Quality tests as per QAP
16. Anything that has the potential to cause harm to people or property is called:
 - a. Threat
 - b. Hazard.
 - c. Risk.
 - d. Accident.
17. As per the GCC of the SBD of PPMO, the contractor can terminate the contract if the employer does not pay against the certified payment within:
 - a. 30 days
 - b. 60 days.
 - c. 90 days
 - d. 120 days.

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18. 'Defect Liability Period in construction starts immediately after:
- a. Issuance of completion certificate.
 - b. The owner takes over of construction.
 - c. the owner's approval.
 - d. Return of retention money.
19. "No employee will suffer diminished health, functional capacity, or life expectancy as a result of his work experience;" is the statement of:
- a. Labour Act 2048 BS.
 - b. OSHA Act 1970.
 - c. Procurement Act 2063 BS.
 - d. SBD of PPMO.
20. Activities performed for the purpose of substantiating the capacity of the project to function as designed at the completion of the construction project is called:
- a. Start up.
 - b. Initial operation.
 - c. Testing.
 - d. Commissioning.

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F. M. : 40

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SECTION "B"

Attempt ALL questions.

1.
 - a. Define and discuss 'management'. Critically express your view on whether management is a science or an Art?
 - b. Differentiate management and planning about a construction project with relevant examples. [5+5=10]
2. Name all the securities (including bonds, bank guaranty or retention) an employer secures from contractors from invitation of bidding to completion of a construction process. Also, mention clearly when those securities are demanded and when released after their purposes are fulfilled. [Based on SBD of PPMO] [6]
3. What do you understand by Monitoring? A project was scheduled for 8 months. During monitoring after 5 months, you are provided information as below (Rs. in lakhs), what would be your evaluation based on Earned Value Analysis? (Support your evaluation with 'variances', 'indices' and also find out 'Estimated Budget at completion'). [2+5=7]

| Month | Month | Month | Month | Month | Month | Month | Month | Month |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BCWS | 25 | 40 | 45 | 45 | 55 | 56 | 60 | 35 |
| BCWP | 25 | 45 | 50 | 50 | 55 | | | |
| ACWP | 20 | 40 | 55 | 50 | 60 | | | |

4.
 - a. What do you understand by 'contract'? What are the ingredients of a contract?
 - b. Describe and differentiate 'Turn-key' contracts and 'Build, Operate and Transfer contracts'. [4+4=8]
5. Write short note on any three. [3+3+3=9]
 - a. Critical path and floats in CPM and their uses in construction management.
 - b. Benefits of machines and equipment in a construction project.
 - c. Characteristics of the 'Joint stock company'.
 - d. Quality cost curves and their nature.

