

KATHMANDU UNIVERSITY  
End Semester Examination  
January 2024

Marks Scored:

Level : B.E.

Year : IV

Exam Roll No. :

Time: 30 mins.

Course : CIEG 403

Semester : I

F. M. : 10

Registration No.:

Date :

SECTION "A"

[20Q. × 0.5 = 10 marks]

*Encircle the most appropriate option from each set of choices.*

1. An evaluation of the ability of a project to succeed is:
  - a. an Appraisal of a project
  - b. a Feasibility studies
  - c. prefeasibility of a project
  - d. a Project formulation
2. If you are to construct 20 houses, you will prepare construction schedule with:
  - a. Gantt Chart
  - b. Milestone Chart
  - c. Line of Balance
  - d. PERT
3. The difference between Earliest Start Time and Latest Start Time of an event in a network is called
  - a. Free Float
  - b. Total Float
  - c. Independent Float
  - d. Slack
4. The organization of partnership with unlimited liabilities is,
  - a. an advantage to the owners
  - b. an advantage to limited partnership
  - c. an advantage to a firm
  - d. a disadvantage to the owners
5. The Public Corporations are established under:
  - a. PPP and Investment Act, 2019
  - b. Development Board Act 2013
  - c. Special Act of Parliament
  - d. Company Act 2063
6. As per the SBD, if the substantial responsive lowest evaluated bid is highly unbalance or front loaded, the performance security can be taken up to:
  - a. 5% of the contract amount
  - b. 8% of the contract amount
  - c. 10% of the contract amount
  - d. 15% of the contract amount
7. If the owner wants to invest and get infrastructure ready for the use, and to entrust all the responsibility to one party, you recommend going for:
  - a. Design-build contract
  - b. Construction Management contract
  - c. Build, Operate and Transfer contract
  - d. Turnkey contract
8. A bidder withdrew his bids 18 hours before the bid submission date and time. While opening the bids you would first open the bid-withdrawal letter, read out the content of the letter and:
  - a. return the bid unopened
  - b. return the bid and release the security
  - c. return the bid but forfeit the bid security
  - d. retain the bid for further evaluation
9. A construction contract is signed by owner and contractor on SBD document of PPMO. During construction, the owner intends to add some additional works within the contract amount, but contractor request for extra money. You as an engineer would decide that:
  - a. contractor must fulfil the owner's demand
  - b. owner should pay for extra works
  - c. parties should for arbitration as per contract
  - d. they should go for litigation

10. If in Earned Value Analysis (EVA), the Cost Variance (CV) is negative then project is:
  - a. over budgeted
  - b. underbudgeted
  - c. behind the schedule
  - d. ahead of schedule
11. Your construction site is in various locations with large area and needs heavy transportation of materials, prefabricated members etc. Your best choice of equipment will be:
  - a. Crawler Crane
  - b. Hoisting Machine
  - c. Tower Crane
  - d. All Terrain Crane
12. The activity of earth excavation for a mat foundation for a double basement of a building in a bit hard soil without sheet piling is a:
  - a. Risk prevention
  - b. Risk retention
  - c. Risk transfer
  - d. Risk avoidance
13. You are to do sheet piling (for underground basement) and precast pile driving for a building in a densely populated city, you would choose:
  - a. Diesel hammer
  - b. Vibratory Pile Driver
  - c. Hydraulic Press-in Pile Driver
  - d. Piling rigs
14. As per the SBD of the PPMO, contracting parties are relieved from their obligations on the event of 'contract frustration', that is certified by:
  - a. owner of the project
  - b. contractor
  - c. project manager
  - d. arbitrator
15. As per the GCC of the Standard bidding Documents of PPMO, if dispute among parties not resolved by amicable settlement, it shall be referred to Arbitration within:
  - a. 20 days
  - b. 21 days
  - c. 25 days
  - d. 30 days
16. The domino theory is related to:
  - a. accident
  - b. hazard
  - c. risk
  - d. safety
17. As per the GCC of the SBD of PPMO, the contractor can claim for the interest on payment if the owner does not pay against the certified payment certificate:
  - a. within 30 days
  - b. within 60 days
  - c. within 90 days
  - d. within 120 days
18. Owner pays the contractor interim payment to the contractor against every bill by deducting:
  - a. Proportionate Advance payment
  - b. Retention money
  - c. Proportionate Advance payment and Retention
  - d. performance security
19. As per Herbert W. Heinrich, the 88% of accidents are attributed to:
  - a. physical conditions
  - b. natural calamities
  - c. unsafe act of persons involved
  - d. Unsafe mechanical condition
20. The functional test at the end of a construction project to substantiate the capacity of a project is called:
  - a. Substantial completion
  - b. Trial operation
  - c. Testing
  - d. Commissioning

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SECTION "B"

Attempt *ALL* questions.

1. Define project and discuss life cycle of project. Why do you think 'construction project management' is important in life cycle of project? [6]
2. What do you understand by planning? Also, briefly describe the different planning tools with their appropriate uses for planning a construction project. [6]
3. Differentiate between quality and grade with example. What are the quality related documents that you refer to if you are to monitor quality issues of a construction project? [6]
4. A project scheduled for eight months with a Budgeted Cost of Work Schedule (BCWS) is as given below. On monitoring at the end of the fifth month, the Budgeted Cost of Work Performed (BCWP) and Actual Cost of Work Performed (ACWP) are as shown below. Find the Schedule Variance, Cost Variance, Indexes, Estimate at Completion, and Budget Variance. Also interpret the results on the performance of the project. [8]

	Jan	Feb	March	April	May	June	July	August
BCWS (in thousands).	1600	2400	3500	3100	3100	2500	2200	1500
BCWP (in thousands).	1500	2600	4000	3100	3200			
ACWP (in thousands).	1400	2700	4200	3200	3200			

5. What do you understand by procurement? Briefly describe the technical and financial criteria a bidder must qualify in bidding under the Single Stage Two Envelope procedure of PPMO? [6]
6. Write short notes on *ANY FOUR*. [4 × 2 = 8]
  - a. Construction cost and different cost curves.
  - b. Joint venture in construction contract.
  - c. Equipment and machines for pile driving.
  - d. Points to be considered by contractor and owner to avoid dispute.
  - e. Safety measure at construction site.

