

Civil Engineering

(4CE4-05) - Construction Management

Time :3Hours

Maximum Marks: 70

Instructions to Candidates:

Part-A: Short answer questions (up to 25 words) 10x2 marks = 20 marks. All ten questions are compulsory.

Part- B: Analytical/Problem Solving questions 5x4 marks = 20 marks. Candidates have to answer 5 questions out of 7.

Part - C: Descriptive/Analytical/Problem Solving questions 3x10 marks = 30 marks. Candidates have to answer 3 questions out of 5.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting materials is permitted during examination. (Mentioned in form No. 205)

1 _____ Nil _____

2 _____ Nil _____

PART-A

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|-------|--|---|
| Q.1. | What do you understand by the line of balance technique? | 2 |
| Q.2. | What is meant by rate analysis in cost estimation? | 2 |
| Q.3. | Define work Breakdown structure (WBS). | 2 |
| Q.4. | What is meant by the critical path in project planning? | 2 |
| Q.5. | Define activity and event in network planning. | 2 |
| Q.6. | Define resource levelling. | 2 |
| Q.7. | What is meant by S-curve in project monitoring? | 2 |
| Q.8. | What is a construction claim? | 2 |
| Q.9. | Write any two causes of construction disputes. | 2 |
| Q.10. | Write the steps of project planning. | 2 |

PART-B

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|------|--|---|
| Q.1. | Explain the types, features and phases of construction projects. | 4 |
| Q.2. | Describe the tendering process and construction contracts, including the roles of the client and contractor. | 4 |
| Q.3. | Explain the steps in project planning, including preparation of the Work Breakdown Structure (WBS) | 4 |
| Q.4. | Explain the Critical Path Method (CPM) and illustrate how to determine the critical path in a network. | 4 |
| Q.5. | Explain various phases of project planning. | 4 |
| Q.6. | Discuss the time-cost trade-off concept and project crashing techniques. | 4 |
| Q.7. | Explain construction claims and dispute resolution mechanisms used in construction projects. | 4 |

PART-C

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| Q.1 | Explain resource scheduling and resource leveling in construction projects. | 10 |
| Q.2. | Explain construction safety and quality management, including causes of accidents and occupational health issues. | 10 |

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- Q.3. Explain the PERT technique in detail, including probability distributions, expected time calculation, and project completion probability. 10
- Q.4. Discuss quality control in construction, including the PDCA cycle and statistical quality control. 10
- Q.5. Write short notes on two of the following: 10
- a. Time-cost trade-off
 - b. Earned-value Analysis
 - c. Construction audit
