

5E1740	Roll No.	5E1740	[Total No. of Pages : 2]
	B.Tech. V-Sem. (Main&Back) Examination, November/December - 2025		
	Civil Engineering		
	5CE3-01 Construction Technology and Equipments		
Time : 3 Hours		Maximum Marks : 70	

Instructions to Candidates:

Attempt all Ten questions from Part A, Five questions out of seven questions from Part B and Three questions out of five questions from Part C.

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

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

PART - A

(Answer should be given up to 25 words only)

All questions are compulsory.

(10×2=20)

1. State any two fundamental principles of engineering economy.
2. List any three common causes of accidents in construction projects.
3. Why is construction planning considered essential for successful project execution?
4. State one major application of cranes and one major application of hoes in construction.
5. What is job layout in construction, and how does inspection contribute to quality control?
6. Write two safety measures for storage and handling of building materials.
7. Differentiate between depreciation and depletion with one example each.
8. Differentiate between a power shovel and a dragline in terms of operation and use.
9. State two main objectives and two key functions of materials management in construction projects.
10. Brief the sum of years Digits Method for calculation of Depreciation.

PART - B

(Analytical / Problem Solving Questions)
Attempt any Five questions.

(5 × 4 = 20)

1. What is a LTI in terms of safety? Also explain the importance of Near-miss reporting and elements of a near-miss report.
2. Explain the significance of the break-even point in engineering economy and how it helps in decision-making?
3. How are accidents classified in construction? Also, write difference between Direct Costs and Indirect Costs in calculation of cost of an accident.
4. What is the primary function of a bulldozer in earthwork? What is the purpose of pile driving equipment and where it is commonly used?
5. A company had 4 lost time injuries in a year. And the employees worked a total of 8,00,000 hours. Find the Frequency Rate (FR).
6. Name the main stages in a construction project and state the purpose of preparing a construction schedule.
7. What are the essential components of a safety programme in construction, and name two types of personal protective equipment.

PART - C

(Descriptive / Analytical / Problem Solving / Design Questions)
Attempt any Three questions.

(3 × 10 = 30)

1. A contractor needs to choose a location for a concrete batch plant along a straight road between two work sites: site 'A' and site 'B'. Site A is at 0 km, site B is at 13 km. Transport cost per cubic meter per km = Rs. 6/-. Total concrete requirement at site A = 1300 m³, site B = 900 m³. Plant installation cost is fixed = Rs. 20,000/- (independent of location). Find the plat location ('X' km from site A) that minimizes total cost.
2. What are the major safety lacunae in the Indian construction industry, and state one fire safety provision as per the National Building Code (NBC).
3. Name two types of hauling equipments and mention in detail one tunnelling method involving drilling and blasting.
4. List any three major construction resources and explain the role of the construction team in detail.
5. Explain in detail "minimum cost point analysis". And also brief why it is important in evaluating the life cycle cost of an engineering project?