

Paper Code: CE-603**Roll No.**

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B.Tech.
(SEM- VI) EVEN SEMESTER EXAMINATION, 2015-16
CONSTRUCTION TECHNOLOGY & MANAGEMENT

[Time: 3 hrs.]**[Max. Marks: 100]**

Note: (i) Attempt ALL questions. All question carry equal marks.
(ii) Assume any data suitably, if required.

1. Attempt any TWO parts of the following:-

[10x2 =20]

- (a) How the construction projects are classified? What are the various types of Projects? Discuss.
- (b) How the Activity schedule, Material schedule, Equipment schedule are done in a project planning? Discuss.
- (c) What is a milestone chart? How does it differ from a bar chart? How can a milestone chart be developed in a network?

2. Attempt any TWO parts of the following:-

[10x2 =20]

- (a) In a network shown in Fig.1 for a construction project, determine the slack for various events, if the scheduled date of completion of the project is 36 days. Present the computations in tabular form. Determine the critical path. Find the probability of completing the project in 37 days.
- (b) What are the shortcoming of Bar chart and their remedial measures?
- (c) Explain with the help of a tabular form, how do you determine the earliest expected time and the latest allowable occurrence time for a network. Differentiate clearly between the forward pass and the back word pass.

3. Attempt any TWO parts of the following:-

[10x2 =20]

- (a) How the minimum cost analysis is carried out? Discuss.
- (b) Maintenance cost for a new bridge with an expected 50 years life was estimated to be Rs 10500 each year for the first five years followed by a Rs 100100expenditure in the 15th year and Rs 100100 expenditure in 30th year. If $i=10%$ per year, what is the equivalent uniform annual cost over the entire 50 years period?
- (c) What is breakeven chart? What are its functions and limitations?

4. Attempt any TWO parts of the following:-

[10x2 =20]

- (a) Define arbitration and what are its objectives? Discuss the advantages of arbitration over law suits in the court.
- (b) What are the different types of contract? Discuss in brief.
- (c) Write a note on “ Departmental procedure for construction work”

5. Attempt any TWO parts of the following:-

[10x2 =20]

- (a) Determine the probable cost per hour for owning and operating a power shovel (crawler tractor mounted) for the following conditions:

Engine, 160 hp diesel
 Crankcase capacity = 30 liters
 Time between oil changes = 100 hrs
 Operating factors = 0.6
 Useful life = 5 years
 Hours used per year = 2000
 Total initial cost = Rs 547060
 Estimated salvage value = Rs 40000

- (b) What do you understand by the economic life of construction equipment? Discuss.
 (c) Discuss the different types of equipments used for earth excavation.

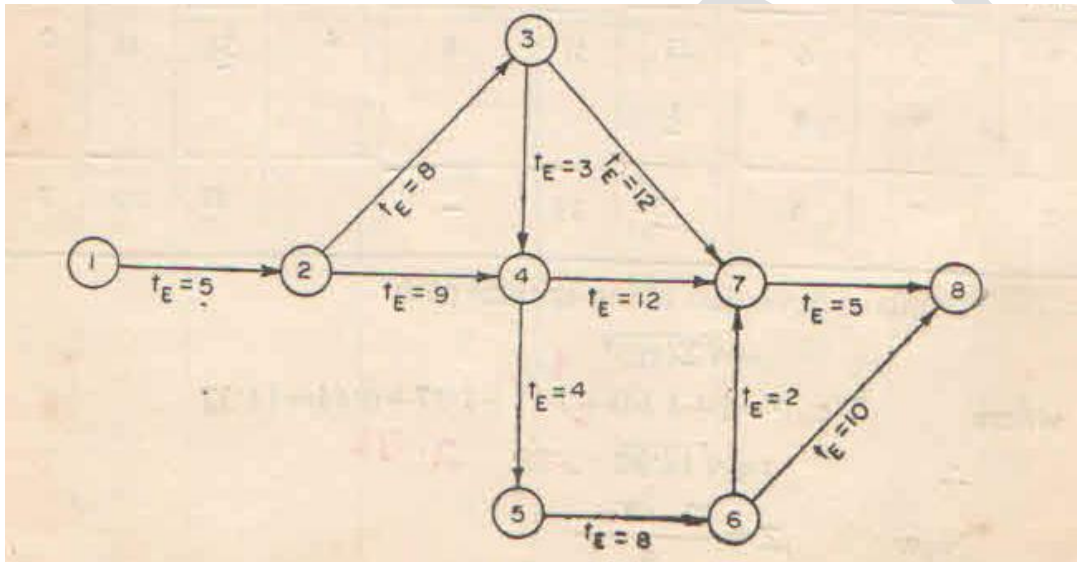


Fig. 1

Table 1: Standard Normal Distribution Function

Z (+)	Probability P _r %	Z (-)	Probability P _r %
+1.0	84.13	-1.0	15.87
+1.1	86.43	-1.1	13.57
+1.2	88.49	-1.2	11.51
+1.3	90.32	-1.3	9.68
+1.4	91.92	-1.4	8.08
+1.5	93.32	-1.5	6.68
+1.6	94.52	-1.6	5.48
+1.7	95.54	-1.7	4.46
+1.8	96.41	-1.8	3.59
+1.9	97.13	-1.9	2.87
+2.0	97.72	-2.0	2.28