Printed Pages : 2 **Roll No.** | | | | | | | | | | | **ECE801**

B.TECH.

THEORY EXAMINATION (SEM–VIII) 2016-17

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

Time : 3 Hours ***Max. Marks : 100***

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION-A

1 Explain the following: (10×2=20)

a) Organization
b) Project Cycle
c) Work study
d) Fulkerson's Rule for node numbering
e) Scheduled completion time
f) Expected mean time
g) Security money
h) Liquidated damage
i) Trenching machines
j) Grade Resistance

SECTION-B

2 Attempt any five of the following: (10×5=50)

a) List down the important elements of planning and discuss the importance of planning in the management.
b) What is meant by scientific management? Discuss briefly the main principles of scientific management.
c) For the given project, find critical path and project duration. Also calculate all activity times and floats in a tabular form.

Activity	Duration(days)	Activity	Duration (days)
1-2	5	3-6	6
1-3	10	4-7	5
2-4	10	5-7	8
2-7	15	6-7	9
3-5	5		

d) Explain how beta distribution curve is suitable to PERT analysis? What is the role of normal distribution curve for finding out the probability of completion of a project?
e) Discuss the following methods used in engineering economics analysis for evaluating and comparing alternatives: (i) Present worth amount (ii) Future worth method (iii) Rate of return method

f) What are items included in the tender document? Prepare a draft of a typical tender notice inviting tenders.

g) Discuss the various means for hauling the materials.

h) How is the size of a power shovel selected in a project? Define the output of a power shovel and list down the factors which affect the output.

SECTION-C

Attempt any two of the following: (15×2=30)

3 Two plans are available for constructing a plant which will have same income per year at all times. Plant (A) is to build half size plant now at the cost of Rs 1 million with operating cost of Rs 200,000 per year for the first four years. At the end of 4^{th} year, an additional costing of Rs 900,000 will be installed to double the capacity. Operating cost thereafter are Rs 350,000 per year.

Plan (B) is to be build full scale plant now at the cost of Rs 1.5 million with operating cost of Rs 250,000 per year for the first 4 years and Rs 300,000 per year thereafter. If money worth is 12% per year and a period of 10 yrs ahead is the basis for comparison which plan should be chosen?

4 Define arbitration and what is its objective? Describe the advantage of arbitration over law suits in court.

5 Discuss the various equipments used in production and placement of concrete. When is it economical and desirable to use ready mix concrete at site of construction?