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B TECH
(SEM-VIII) THEORY EXAMINATION 2018-19
CONSTRUCTION TECHNOLOGY AND MANAGEMENT

Time: 3 Hours

Total Marks: 100

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20
- a. What are the six main functions of management in undertaking a construction project?
 - b. What is project life cycle?
 - c. What is the significance of development of bar chart?
 - d. What do you understand by a dummy? What are its uses?
 - e. What are reciprocal promises in a contract?
 - f. Explain the event slack?
 - g. What do you understand by critical path?
 - h. Enlist the various types of heavy hauling equipment vehicles?
 - i. What is economic efficiency?
 - j. What is Crash cost and crash time?

SECTION B

2. Attempt any *three* of the following: 10 x 3 = 30
- a. Explain why planning is necessary? Describe various steps for planning a Project.
 - b. A father notes that his teenage daughter uses the telephone. She takes no less than 5 minutes for a call and sometimes as much as an hour. Fifteen minutes calls are more frequent than calls of any other duration. If daughter's phone calls were activity in PERT project,
 - i. What would be the phone call's expected duration?
 - ii. What estimate would you give for its variance?
 - iii. In scheduling the project, how much time would you allocate for the phone call.
 - c. The two machines A and B have the following costs with the money worth as 8% per year;

	A	B
First cost	10000	25000
Salvage value	1100	1500
Uniform end of year expenditure	3000	2000
Irregular expenses at end of 1 st year	1000	-
Irregular expenses at end of 3 rd year	-	2500
Benefit from quality control(at the end of year)	-	600
life	2 years	5 years

Compare the machines for the following base:

- i. Present worth.
- ii. Equivalent Annual cost worth.
- iii. Capitalized cost worth.

- d. Explain briefly the procedure of pre-qualification of contractors. State its advantages and drawbacks. List the main points to be considered while pre-qualifying the contractors.
- e. Write short notes on:
 - i. Screening equipment
 - ii. Crushers
 - iii. Handling equipment

SECTION C

- 3. Attempt any *one* part of the following: 10 x 1 = 10**
- (a) Why is it necessary to maintain an appropriate reporting and monitoring system in a construction project? Describe the managerial system with the help of an organizational chart for a job site.
 - (b) Explain in detail about the allocation of resources.
- 4. Attempt any *one* part of the following: 10 x 1 = 10**
- (a) How are logical relationships among activities established? Show by an example that network of a project varies from person to person.
 - (b) An activity in a CPM network has duration of 4 days. The free float for the activity is 10 days and the total float is also 10 days. Find the maximum delay that can be allowed for the activity from occurrence of the preceding event.
- 5. Attempt any *one* part of the following: 10 x 1 = 10**
- (a) A company has purchased an equipment whose first cost is Rs 1,00,000 with an estimated life of 8 years. The estimated salvage value of the equipment at the end of its lifetime is Rs 20,000. Determine the depreciation charge and book value using the Sinking Fund method of depreciation with interest rate of 12%, compounded annually.
 - (b) Draw a typical cost – duration curve and show on the optimum duration and minimum project Cost.
- 6. Attempt any *one* part of the following: 10 x 1 = 10**
- (a) List the information which should customarily appear in an advertisement for tenders.
 - (b) What is the purpose of ‘retention money’? When payments may be made at reduced rate? How and by whom are the reduced rates determined?
- 7. Attempt any *one* part of the following: 10 x 1 = 10**
- (a) Describe the quality control and safety engineering in construction.
 - (b) What do you mean by concrete mixer? Explain the different types of concrete mixers and its application.