

III B. Tech I Semester Regular Examinations, Dec/Jan – 2022-23
CONSTRUCTION TECHNOLOGY & MANAGEMENT
 (Civil Engineering)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
 All Questions Carry Equal Marks

UNIT-I

1. a) Enumerate the steps involved in Construction scheduling of a major project. [7M]
- b) Show the differences between Critical Path Method and PERT technique. [7M]

(OR)

2. a) What is the significance of development of bar chart and milestone chart? [7M]
- b) Explain why planning is necessary? Describe various steps for planning a project. [7M]

UNIT-II

3. a) Explain about Resource Analysis and Resource Allocation. [7M]
- b) Explain about Project evaluation and review technique with one example? [7M]

(OR)

4. a) Explain the steps involved in cost duration analysis. [7M]
- b) Write about the updating in project evaluation. [7M]

UNIT-III

5. a) Write short notes on: tractors, motors and graders. [7M]
- b) Explain the important economical consideration required for construction equipment. [7M]

(OR)

6. a) List various operations that can be performed by a bulldozer. [7M]
- b) Elaborately discuss the various material handling equipment (any two) and discuss their specific purpose in detail [7M]

UNIT-IV

7. a) Briefly explain about batching and mixing equipment [7M]
- b) Give the detailed classification of Concrete mixers along with their limitations, advantages and disadvantages. [7M]

(OR)

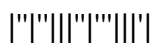
8. a) What do you mean by concrete mixer? Explain the different types of concrete mixers and its application. [7M]
- b) What is the process of column concreting, explain in detail. [7M]

UNIT-V

9. a) Explain the different methods of construction. [7M]
- b) Explain the procedure for pile concreting [7M]

(OR)

10. a) Write about quality control and safety engineering in construction. [7M]
- b) Explain the safety precautions to be taken in pile driving and pile concreting. [7M]



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UNIT-I

1. a) Explain in detail about the functions and limitations of CPM techniques. [7M]
 - b) Discuss the roles of Project Manager in detail. [7M]
- (OR)
2. a) What is a mile stone? In what terms are they superior to bar chart method of representation? [7M]
 - b) Explain in detail about the components of Networks. [7M]

UNIT-II

3. a) Explain about crashing for optimum cost and crashing for optimum resources. [7M]
 - b) Discuss in brief the resources allocation problem. What are the methods of solving the problem? [7M]
- (OR)
4. a) Explain about Resource Leveling and Resource Allocation? [7M]
 - b) Write about the cost-duration analysis. [7M]

UNIT-III

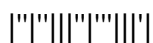
5. a) Discuss in detail the procedure to calculate the truck production and its utility for any construction project. [7M]
 - b) Explain about the Hoisting and Earthwork equipment in detail. [7M]
- (OR)
6. a) Highlight and explain the various factors governing the selection of earthmoving equipment. [7M]
 - b) Write about the compaction equipment and various types of rollers. [7M]

UNIT-IV

7. a) Write about mixing and placing of concrete. [7M]
 - b) What do you understand by screening of aggregate? Explain about its necessity in construction industry. [7M]
- (OR)
8. a) How is the mixing and placing of concrete done, explain it. [7M]
 - b) Explain the properties of materials (aggregates)required in batching plant to prepare good concrete [7M]

UNIT-V

9. a) Write the properties of materials for formwork. [7M]
 - b) Explain the methods of piling. [7M]
- (OR)
10. a) What are the durability and reusability aspects of formwork. [7M]
 - b) Explain method of earthwork for dam constructions. Also explain the safety precautions to be taken in earthworks. [7M]



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UNIT-I

1. a) What is the purpose of planning? What are the necessary data required for updating? [7M]
 b) Differentiate clearly between most likely time estimate (t_L), mean time (t_m) and expected time (t_E). [7M]

(OR)

2. a) Discuss in detail about the scheduling and monitoring. [7M]
 b) What are the main objectives and applications of construction management? [7M]

UNIT-II

3. a) Draw a typical cost-duration curve and show on it optimum duration and minimum project cost. [7M]
 b) Discuss in brief the stepwise resources allocation problem. [7M]

(OR)

4. a) Differentiate between crashing for optimum cost and crashing for optimum resources. [7M]
 b) What do you understand by updating? Why is it essential? Illustrate the method of updating a network during its execution period. [7M]

UNIT-III

5. a) What are the differences between graders and scrapers? Discuss in detail. [7M]
 b) Discuss about the rear dump truck and its significance. [7M]

(OR)

6. a) List out the various factors governing the selection of earthmoving equipment. [7M]
 b) Discuss in detail about the clamshell buckets and its applications. [7M]

UNIT-IV

7. a) Briefly explain about batching and mixing equipment [7M]
 b) Write about mixing and placing of concrete. [7M]

(OR)

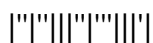
8. a) Describe the different types of concrete mixers and their application. [7M]
 b) Discuss briefly about the screening of aggregate. [7M]

UNIT-V

9. a) What are the materials required for fabrication of special type of formwork, say DOKA. [7M]
 b) Give the differences between industrial form work and conventional form work. [7M]

(OR)

10. a) Explain the different types of form works and their uses? [7M]
 b) Write in detail about quality control and safety engineering. [7M]



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UNIT-I

1. a) What do you understand by critical path? What is project planning? [7M]
- b) What are different elements present in CPM network and explain with an example. [7M]

(OR)

2. a) What are the charts? Enumerate the various types of charts with graphical representation? [7M]
- b) What are the objectives and functions of construction management? [7M]

UNIT-II

3. a) What are the various costs involved in Time – Cost analysis? Explain each in detail. [7M]
- b) Explain the important features of construction management software. [7M]

(OR)

4. a) Explain in detail Resources Smoothing method of Resources allocation problems. [7M]
- b) Draw a typical cost – duration curve and show on the optimum duration and minimum project Cost. [7M]

UNIT-III

5. a) What is meant by cycle time in trucks and how do you calculate the truck production? [7M]
- b) Explain about utilization of rollers, dozers and scrapers in construction. [7M]

(OR)

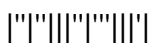
6. a) Explain in detail the procedure to calculate capacity of truck [7M]
- b) Discuss in detail different factors affecting selection of construction equipment. [7M]

UNIT-IV

7. a) How do you carry out the mixing and placing of concrete in construction projects? Explain in detail? [7M]
- b) Differentiate between impact and Gyratory Crushers based on their use and application. [7M]

(OR)

8. a) Write about mixing and placing of concrete. [7M]
- b) Explain the process of preparation for placing of concrete for slab. [7M]



UNIT-V

9. a) Explain different types of Formwork with respect to elements of structures. [7M]
b) Discuss in detail about various types of piles used in earth work for a project. [7M]
- (OR)
10. a) Differentiate between earthwork and formwork. [7M]
b) Discuss the importance of fabrication and erection work in engineering projects. [7M]

