Code No: **R1642012** **R16** **Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, June - 2022

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B

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PART–A *(14 Marks)*

1.	a)	What are the objectives and principles of project planning?	[2]
	b)	What is slack? What are the different types of slack?	[2]
	c)	List out the any four factors affecting the selection of construction equipment.	[2]
	d)	Enumerate the merits and demerits of Tractors.	[3]
	e)	Write the different types of concrete mixers.	[3]
	f)	Explain the importance of safety engineering in construction projects.	[2]

PART–B *(4x14 = 56 Marks)*

2.	a)	Discuss in brief the role of management in project execution.	[7]
	b)	Differentiate bar chart and mile stone chart.	[7]
3.	a)	Draw a typical cost – duration curve and show on the optimum duration and minimum project Cost.	[7]
	b)	Enumerate the steps involved in cost duration analysis.	[7]
4.	a)	Describe about compaction equipment and its significance.	[7]
	b)	Explain in detail the procedure to calculate the truck production and its utility for any construction project.	[7]
5.	a)	Discuss the various factors governing the selection of earthwork equipment.	[7]
	b)	Explain briefly about the hoists and their applications.	[7]
6.	a)	Compare jaw crusher and impact crusher and highlight under what circumstances these crushers are selected/used.	[7]
	b)	Explain in detail the mixing and placing operation of concrete in construction projects?	[7]
7.	a)	Describe briefly the importance of quality control in the construction	[7]
	b)	Differentiate between industrial form work and conventional form work	[7]

Code No: **R1642012** **R16** **Set No. 2**

IV B.Tech II Semester Regular/Supplementary Examinations, June - 2022

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B

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PART–A *(14 Marks)*

1. a) Why do projects need planning? [2]
   b) What do you understand by a dummy in network diagram? What are its uses? [3]
   c) Define cycle time. [2]
   d) Enumerate the merits and demerits of scrapers. [3]
   e) Write a short note on impact crushers. [2]
   f) List out the uses of quality control in construction projects. [2]

PART–B *(4x14 = 56 Marks)*

2. a) Elaborate the qualities of a project manager. [7]
   b) A construction company has an opportunity to submit a bid for the construction of a new apartment building. From the specification provided by the developer, the PERT network along with the three-time estimate (in a week) for each activity are shown in Figure 1. Determine (i) the critical path and its standard deviation. (ii) Probability of completion of project in 38 days. [7]

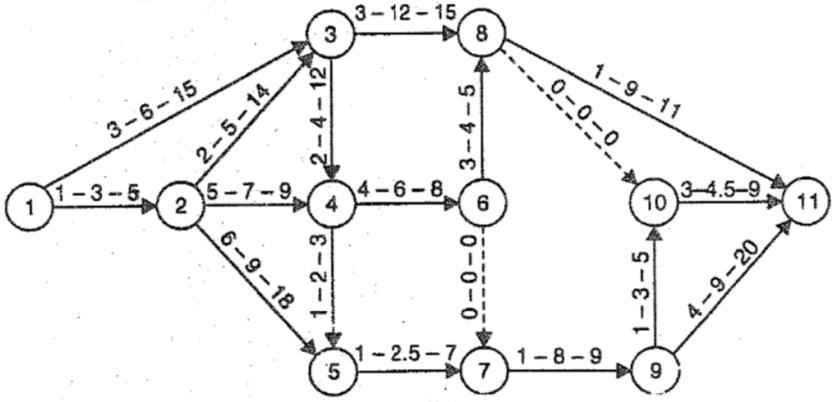

Figure 1

3. a) Explain about Project evaluation and review technique with one example? [7]
   b) Distinguish between crashing for optimum cost and crashing for optimum resources [7]

4. a) Discuss briefly the different types of compaction rollers and their uses. [7]
   b) Explain different types of earth work equipment used in the field along with their applications. [7]

5. a) Explain briefly about the graders and their applications. [7]
   b) Write a short notes on (i) Scrapers (ii) Tractors [7]

6. a) Describe different types of concrete mixers along with their applications. [7]
   b) Enumerate the key points in the selection of aggregate crusher for a project. [7]

7. a) Explain in detail the common risks possible at the fabrication stage. [7]
   b) Briefly discuss about the methods of piling. [7]

Code No: **R1642012** **R16** **Set No. 3**

IV B.Tech II Semester Regular/Supplementary Examinations, June - 2022

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B

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PART–A *(14 Marks)*

1. a) Define critical path? How is it identified? [2]
   b) Discuss cost analysis. [2]
   c) Explain the necessity of compaction. [2]
   d) Write about hoists. [3]
   e) Write the different concreting equipments. [3]
   f) State the safety precautions to be followed at construction sites [2]

PART–B *(4x14 = 56 Marks)*

2. a) Describe the stages and types of planning in construction management. [7]
   b) List out the methods of scheduling? Explain with the help of a suitable example, the method of preparing a bar chart. [7]

3. a) Explain about Resource Analysis and Resource Allocation. [7]
   b) Discuss the cost-duration analysis in PERT. [7]

4. a) Discuss different trucks used in the construction field and write about its capacities. [7]
   b) List out the different factors affecting the selection of construction equipment and explain them briefly. [7]

5. a) Explain briefly about the draglines and their applications. [7]
   b) Classify different types of bulldozers and their applications. [7]

6. a) List out the concreting equipment used in building construction and explain them briefly. [7]
   b) Explain the screening of aggregate and highlight its importance. [7]

7. a) Describe different types of form work. [7]
   b) Discuss different methods of placing concrete and emphasize the limitations of each method. [7]

Code No: **R1642012** **R16** **Set No. 4**

IV B.Tech II Semester Regular/Supplementary Examinations, June - 2022

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B

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PART–A *(14 Marks)*

1. a) What is the significance of critical path? [2]
   b) Explain the significance of Beta distribution Curve in PERT analysis. [2]
   c) Discuss about rear dump truck. [3]
   d) Illustrate the uses of bulldozers. [2]
   e) Differentiate between the slip form paver and fixed form paver. [2]
   f) List out the various types of earthwork equipment? Mention their uses. [3]

PART–B *(4x14 = 56 Marks)*

2. a) What are different elements present in the PERT network and explain with an Example. [7]
   b) Explain about [7]
      i) Earliest start time
      ii) Total float
      iii) Free float

3. a) Explain about crashing for optimum cost and crashing for optimum resources. [7]
   b) What are the various costs involved in Time – Cost analysis? Explain each in detail. [7]

4. a) Enumerate the economical considerations for the selection of earthwork equipment? Discuss it. [7]
   b) Explain in detail about the trucks and hauling equipment? [7]

5. a) Explain briefly about the clam shell buckets and their applications. [7]
   b) Differentiate between graders and scrapers in detail. [7]

6. a) List out different types of aggregate crushers and explain them briefly [7]
   b) Explain about different types of concrete compacting equipment along with their limitations. [7]

7. a) Enumerate the importance of fabrication and erection work in engineering projects. [7]
   b) Explain any two construction methods. [7]

Code No: **R1642022** **R16** **Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, June - 2022

HVDC TRANSMISSION

(Electrical and Electronics Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B

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PART–A *(14 Marks)*

1. a) Write the advantages of controllability of DC transmission systems? [2]
   b) Write the relation between source reactance and coupling factor of 12 pulse converter? [2]
   c) What is meant by constant AC voltage control? [3]
   d) List out the sources of reactive power. [2]
   e) What is meant by current extinction malfunction in the controllers? [2]
   f) Write the objective of design of AC filters? [3]

PART–B *(4x14 = 56 Marks)*

2. a) Draw the characteristics and explain the cost variation characteristics of AC and DC transmission systems. [7]
   b) Explain the reliability of HVDC transmission systems with necessary equations. [7]

3. a) Discuss in detail about the 5 modes of region of the rectifier operation of a 12 pulse converter. [7]
   b) Explain in detail about the differences between the operational features of 6 pulse and 12 pulse converters for HVDC system. [7]

4. a) Analyze the steady state equivalent circuit of a two terminal DC link by using relevant expressions. [7]
   b) Draw and explain the converter control characteristics for negative current margin. [7]

5. a) Discuss in detail about the sequential method of power flow solution with necessary equations. [7]
   b) Explain in detail about the conventional control strategies of the reactive power control in the steady state. [7]

6. a) Elaborate the short circuit in a bridge with voltage and current wave forms. [7]
   b) Discuss in detail about the differences between the voltage and current harmonics with necessary equations. [7]

7. a) Derive the expression for the inductance of a single tuned filter. [7]
   b) Explain in detail about the design aspects of high pass filter with necessary equations. [7]