NARSIMHA REDDY ENGINEERING COLLEGE
UGC AUTONOMOUS INSTITUTION
Maisammaguda (V), Kompally - 500100, Secunderabad, Telangana State, India
UGC - Autonomous Institute
Accredited by NBA & NAAC with 'A' Grade
Approved by AICTE
Permanently affiliated to JNTUH

DEPARTMENT OF CIVIL ENGINEERING

IV B. Tech, I Semester, Academic Year:2024-25

CONSTRUCTION TECHNOLOGY AND PROJECT MANAGEMENT

QUESTION PAPERS

Code No: **RT41013** **R13** **Set No. 1**

IV B.Tech I Semester Regular/Supplementary Examinations, Jan/Feb - 2022
CONSTRUCTION TECHNOLOGY AND MANAGEMENT
(Civil Engineering)

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

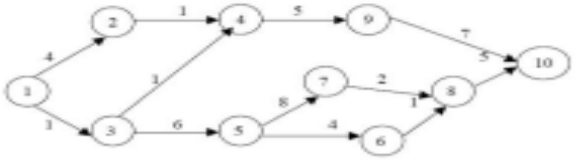
Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any THREE questions from Part-B
*****

PART–A ***(22 Marks)***

1.	a)	Define the terms: independent float, interfering float and intermediate float.	[4]
	b)	Draw a typical Time-Cost duration Curve and show on it the optimum duration and minimum project cost.	[4]
	c)	Describe the role of construction equipment in the speedy and economical completion of construction projects.	[3]
	d)	Give the classification of hoisting equipments.	[3]
	e)	Enumerate the factors governing the selection of concrete mixers.	[4]
	f)	Define the terms: Injury frequency rate and Injury Index.	[4]

PART–B ***(3x16 = 48 Marks)***

2.	a)	State the need, purpose and objectives of Construction management.	[4]
	b)	What is slack? List out different types of slack.	[4]
	c)	Calculate the earliest and latest activity times and total floats for each activity for the given network and also determine the critical path and total duration of the project.	[8]



Code No: **RT41013** **R13** **Set No. 1**

3. a) A project designed to refurbish a hospital operating theatre consists of the following activities, with estimated times and precedence relationships shown. Using this information draw a network diagram, determine the expected time and variance for each activity, and estimate the probability of completing the project within sixty days. [10]

Activity	Immediate Predecessors	Optimistic Time	Most Likely Time	Optimistic Time
A	-	5	7	10
B	-	10	13	20
C	A	5	8	13
D	B	8	9	16
E	B, C	20	22	29
F	D	10	17	25

b) Discuss the importance of Resource Allocation in construction industry. [6]

4. a) Differentiate the characteristics and applications of different types of earth excavating equipments. [8]
b) Explain in detail the data required and the procedure involved in the calculation of truck production by means of an example. [8]

5. a) Describe the application and method of operation of any two types of cranes. [8]
b) Discuss in detail the advantages and disadvantages, limitations of Clamshell buckets. [8]

6. a) Explain in brief various methods of mixing of concrete along with their types and applications. [8]
b) Discuss the working principle of any two types of crushers along with neat line diagrams. [8]

7. a) Describe the process involved and the precautions to be followed in placing of concrete. [8]
b) Explain in detail the role of various stake holders in safety management. [8]

Code No: **RT41013** **R13** **Set No. 1**

IV B.Tech I Semester Regular Examinations, November - 2016
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 THREE questions from Part-B
*****

PART–A ***(22 Marks)***

1. a) What is the purpose of work scheduling? [4]
   b) Define activity cost slope. [3]
   c) What are the uses of compaction? [4]
   d) What are the different types of scrapers and write its purpose. [3]
   e) Write the uses of Concrete Mixer. [4]
   f) What are the various types of earthwork equipment? Mention their uses. [4]

PART–B ***(3x16 = 48 Marks)***

2. a) What are the different types of floats involved in CPM? [8]
   b) Explain in detail project management constructions. [8]

3. a) Explain about Resource Analysis and Resource Allocation. [10]
   b) Explain the steps involved in cost duration analysis. [6]

4. a) Explain about the compaction equipment and various types of rollers. [8]
   b) Explain about different trucks used in construction field and write about its capacities. [8]

5. What is the operating principle of a power shovel? What are the factors which affecting the output of a power shovel? [16]

6. Explain about
   i) Mixing and placing of concrete ii) Consolidating and finishing. [16]

7. a) Explain the different methods of construction? [8]
   b) Write about quality control and safety engineering in construction. [8]

Code No: **RT41013** **R13** **Set No. 2**

IV B.Tech I Semester Regular Examinations, November - 2016
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 THREE questions from Part-B
*****

PART–A ***(22 Marks)***

1. a) List out the advantages of scheduling. [4]
   b) What is meant by resource leveling and crashing? [4]
   c) What is the use of rear dump truck? [3]
   d) Explain about Tractors. [3]
   e) What are the uses of crushers? [4]
   f) Explain the methods of piling. [4]

PART–B ***(3x16 = 48 Marks)***

2. a) What are the objectives and functions of construction management? [8]
   b) Draw a PERT network for the following and find expected mean time, variance and SD of the project.

Activity	Three-time estimates (days)
0-1	2-3-10
0-2	4-5-6
1-2	0-0-0
1-3	6-7-8
1-4	1-5-9
2-5	3-5-19
3-4	0-0-0

[8]

3. a) Explain about Project evaluation and review technique with one example? [8]
   b) Write about the updating in project evaluation. [8]

Code No: **RT41013** **R13** **Set No. 2**

4. Mention the various types of earthwork equipment and their uses keeping in view of economical considerations. [16]

5. a) Describe the various applications of a bulldozer. [8]
   b) List various operations that can be performed by a bulldozer. [8]

6. a) Name the equipments needed for compacting concrete and explain their uses in detail? [8]
   b) Write about the selection of crushing equipment. [8]

7. Write short notes on
   i) Placing of concrete [6]
   ii) Form work [5]
   iii) Fabrication and erection [5]

MID QUESTION PAPERS

QUESTION BANK:

a) Enumerate the steps involved in Construction scheduling.
b) Explain the significance of Beta distribution Curve in PERT analysis.
c) Highlight the limitations of Earthmoving equipments.
d) Discuss the advantages and disadvantages of Clamshell buckets.
e) Differentiate between Jaw and Gyratory Crushers based on their use and application.
f) State the safety precautions to be followed at construction sites.
What are the short comings of bar charts?
Define 'latest start time 'and latest finish time.
How to calculate truck production?
Write about clamshell buckets?
What are the different concrete mixers?
What is fabrication?