IV B.Tech I Semester Supplementary Examinations, March - 2017 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)	Enumerate the steps involved in Construction scheduling.	[3]
b)	Explain the significance of Beta distribution Curve in PERT analysis.	[4]
c)	Highlight the limitations of Earthmoving equipments.	[4]
d)	Discuss the advantages and disadvantages of Clamshell buckets.	[4]
e)	Differentiate between Jaw and Gyratory Crushers based on their use and	
	application.	[4]
f)	State the safety precautions to be followed at construction sites.	[3]
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\underline{PART} \underline{B} (3x16 = 48 Marks)

2. a) For a construction project, the following activities are to be performed. Activities P and Q can be performed in parallel; activities R and S cannot start until P is complete. T cannot start until half work of activity R is complete. Activity U can start only after activity S is complete. Activity N succeeds activity R and activity W which is the last activity succeeds T. Draw the bar chart and determine the total completion time of the project.

Activities	Duration (weeks)
A	2
В	4
С	2
D	4
Е	6
F	4
G	5
Н	4

[6]

b)	What is meant by Work Breakdown Structure?	[5]
c)	Show the differences between Critical Path Method and PERT technique.	[5]

R13

Set No. 1

3. a) The following table gives data on normal time and cost and crash time and cost for a project. (a) Draw the network and identify the critical path. (b) What is the normal project duration and associated cost? (c) Find out total float for each activity. (d) Crash the relevant activities systematically and determine the optimum project time and cost. The indirect cost can be taken as Rs. 150 per week.

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Activity	Normal time (weeks)	Crash time (weeks)	Normal Cost (Rs. Per week)	Crashing Cost (Rs. Per week)
1-2	3	2	300	600
2-3	3	3	450	550
2-4	7	5	600	780
2-5	9	7	920	1010
3-5	5	4	450	550
4-5	0	0	0	0
5-6	6	4	800	1100
6-7	4	3	1000	1500
6-8	13	10	900	1200
7-8	10	9	1800	2000

[10]

[6]

- b) What are the various costs involved in Time Cost analysis? Explain each in detail.
- 4. a) Explain the important economical consideration required for construction equipments. [8]

b) Discuss in detail the procedure to calculate the truck production and its utility for any construction project. [8]

5. a) Highlight and explain the various factors governing the selection of earthmoving equipment. [6]

b) With neat sketches, explain any two methods of earthmoving. [5]

- c) Explain in detail the significance and application of Power shovels. [5]
- 6. a) What do you understand by screening of aggregate? Explain about its necessity in construction industry. [8]
 - b) Give the detailed classification of Concrete mixers along with their limitations, advantages and disadvantages. [8]
- 7. a) Discuss in detail the common risks possible at the fabrication stage. [8]
 - b) What do you understand by Quality Control in Construction industry? How it helps in good quality of workmanship. [8]

Code No: **RT41013**

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] $\underline{PART-B} (3x16 = 48 Marks)$ 2. a) What are the different types of floats involved in CPM? [8] b) Explain in detail project management constructions. [8] Explain about Resource Analysis and Resource Allocation. 3. a) [10] 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]

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]
		$\underline{\mathbf{PART-B}}\left(3x16=48\;Marks\right)$	
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.			the various types of earthwork equipment and their uses keeping in view mical considerations.	[16]
5.	a)	Describe	the various applications of a bulldozer.	[8]
	b)	List vario	ous operations that can be performed by a bulldozer.	[8]
6.	a)	Name the	e equipments needed for compacting concrete and explain their uses in	[8]
	b)		out the selection of crushing equipment.	[8]
7.		Write she	ort notes on	
		i)	Placing of concrete	[6]
		ii)	Form work	[5]
		iii)	Fabrication and erection	[5]

Code No: **RT41013**

R13

Set No. 3

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 significance of critical path?	[4]
	b)	Define EST.	[3]
	c)	What are the different types of compaction equipment?	[4]
	d)	Write the parts of a scraper with neat sketch.	[4]
	e)	What are the different concrete mixers?	[4]
	f)	Write about pile driving equipment.	[3]
		$\underline{\mathbf{PART-B}} (3x16 = 48 \ Marks)$	
2.		What are the charts? Enumerate the various types of chart with graphical representation?	[16]
3.		Explain about crashing for optimum cost and crashing for optimum resources.	[16]
4.		Discuss the role of tractors in earth moving. What considerations govern the selection of wheel type or crawler type tractor on a job? Compare their applications.	[16]
5.		Elaborately discuss the various material handling equipments (any Four) and discuss their specific purpose in detail.	[16]
6.		Explain in detail various equipment used for compaction, batching and mixing of concrete.	[16]
7.		Explain the different types of form works and their uses?	[16]

1 of 1

Code No: **RT41013 R13**

Set No. 4

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 numbering events?	[4]
	b)	What is the classification of networks?	[4]
	c)	What are the different compaction rollers and write about any two of them.	[4]
	d)	How can scrapers help in increasing speed of construction	[4]
	e)	What are the types of crushers?	[3]
	f)	Write about sheet piles?	[3]
		$\underline{PART-B} (3x16 = 48 Marks)$	
2.	a)	Describe PERT and CPM?	[8]
	b)	Write about components of Networks?	[8]
3.	a)	Explain about Resource Leveling and Resource Allocation?	[8]
	b)	Write about the cost-duration analysis.	[8]
4.	a)	What are the various factors affecting while selecting construction equipments?	[8]
	b)	What is the cycle time in trucks and calculate the truck production.	[8]
5.		Explain about the Hoisting and earthwork equipment in detail?	[16]
6.		Explain in detail about i) jaw crushers ii) gyratory crushers iii) impact crushers	[16]
7.	a)	Write in detail about quality control and safety engineering.	[8]
	b)	Give the differences between industrial form work and conventional form work.	[8]