Course Code: 19CE0124 **R19**

SIDDARTHA INSTITUTE OF SCIENCE AND TECHNOLOGY:: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code: Construction Project Management(19CE0124) **Course & Branch**:B.Tech &CE

Year & Sem: III Year & II Sem **Regulation:** R19

UNIT –I
CONSTRUCTION PROJECT & CONSTRUCTION PLANNING

1	a) What is the importance of construction? b) Expalin about the Indian construction industry?	[L1][CO1] [L2][CO1]	**[6M]** **[6M]**
2	What are the different phases in construction project? Explain briefly?	[L2][CO1]	**[12M]**
3	a) Define construction project? Write about its unique features? b) What are the types of construction? Explain?	[L1][CO1] [L1][CO1]	**[6M]** **[6M]**
4	Define construction project management and its relevance Who are the major participants involved in a construction project explain briefly?	[L1][CO1] [L1][CO1]	**[5M]** **[7M]**
5	What are the main functions of construction management? Explain.	[L1][CO1]	**[12M]**
6	What are the types of project plans? Explain briefly.	[L1][CO1]	**[12M]**
7	a) What is the bar chart? Explain with neat sketch? b) What is a milestone chart? Explain with neat sketch?	[L1][CO2] [L1][CO2]	**[6M]** **[6M]**
8	a) Explain about classification of network? Explain briefly? b) Explain the difference between AoA and AoN diagram?	[L2][CO1] [L2][CO1]	**[6M]** **[6M]**
9	Draw the sketches of some common network logic ways used in network?	[L2][CO1]	**[12M]**
10	a) What is a work break down structure? Explain. b) What are the common errors in network drawings? Explain with sketches?	[L1][CO1] [L1][CO1]	**[5M]** **[7M]**

UNIT –II
PERT AND CPM NETWORK ANALYSIS

1 a) Define PERT. Discuss in detail. [L1][CO2] **[6M]**
b) What are the different types of time estimates involved in PERT? Explain in detail [L1][CO2] **[6M]**

2 A project schedule has the following characteristics [L3][CO2] **[12M]**
a) Construct network diagram
b) Find the estimated duration and variance
c) Find the critical path and expected project completion time
d) What is the probability of completing the project on or before 22 weeks

Activity	Predecessor	Duration (weeks)		
		t_o	t_m	t_p
A	-	5	6	7
B	-	1	3	5
C	-	1	4	7
D	A	1	2	3
E	B	1	2	9
F	C	1	5	9
G	C	2	2	8
H	E, F	4	4	10
I	D	2	5	8
J	H, G	2	2	8

3 A project schedule has the following characteristics [L3][CO2] **[12M]**
a) Construct network diagram
b) Find the estimated duration and variance
c) Find the critical path, slack and expected project completion time
d) What is the probability of completing the project on or before 42 weeks

Activity	Dependency	Duration(Days)		
		t_o	t_m	t_p
A	-	3	12	21
B	A	2	5	14
C	A	6	15	30
D	B	1	2	3
E	B	5	14	17
F	C,D	2	5	14
G	C,D	4	5	12
H	E, F	1	4	7

4 Explain in detail about β- Distribution curve and expected duration. [L2][CO2] **[12M]**

5 A project has the following characteristics [L3][CO2] **[12M]**

Activity	Predecessor	Duration(weeks)		
		t_o	t_m	t_p
A	-	0.5	2	7
B	A	1	3	5
C	A	1	5	7
D	B	3	5	3
E	C	2	4	9
F	C	3	7	9
G	D,E	4	6	8
H	F	6	8	10
I	G, H	2	6	8
J	G, H	5	8	8
K	I	1	3	8
L	J	3	7	8

Construct a PERT network and compute the probability that the project will be completed within 30 weeks.

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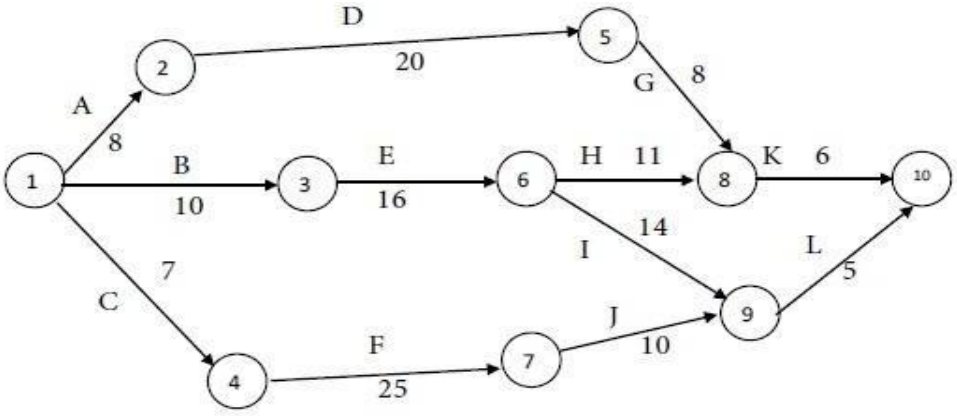
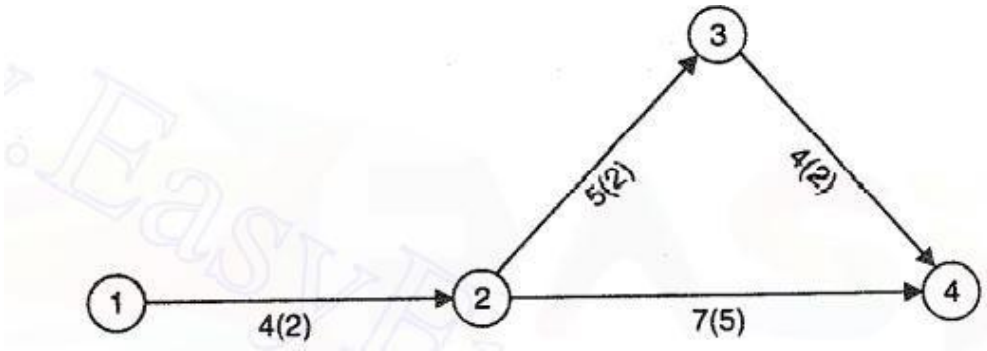
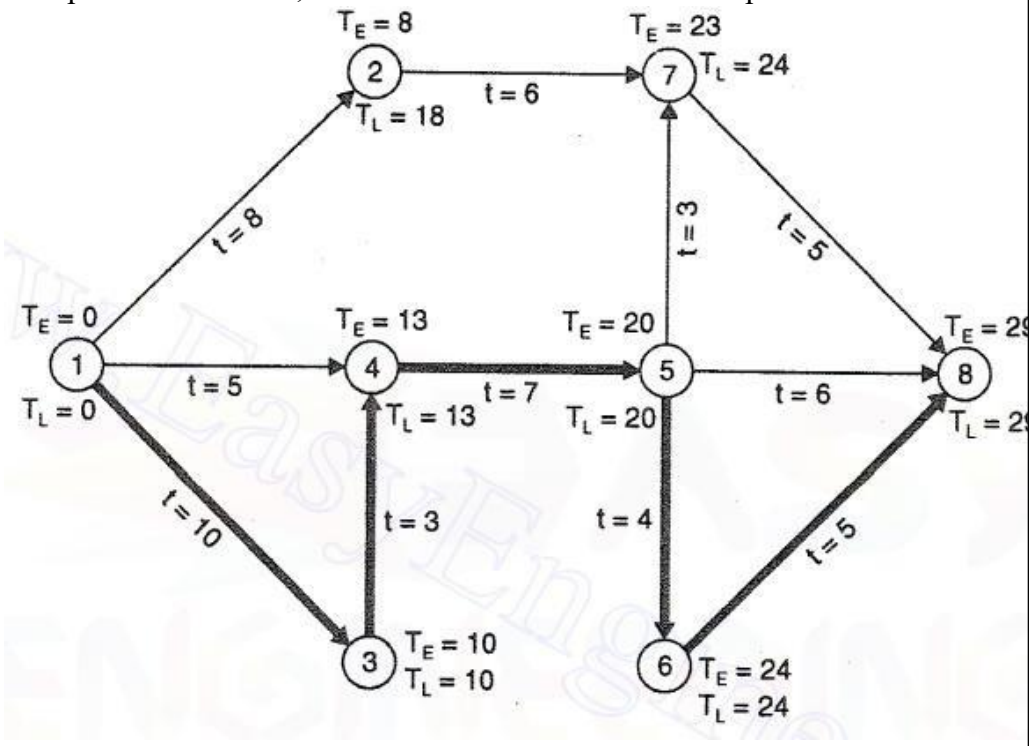
6	What is CPM network analysis? Explain in detail.	[L1][CO2]	**[12M]**
7	a) Define Duration of an activity? What are the activity times? Explain b) Define Float? What are the types of float?	[L1][CO2] [L1][CO2]	**[6M]** **[6M]**
8	The following details are available regarding a project: **Activity** | **Dependency** | **Duration (months)** A | - | 2 B | - | 5 C | - | 4 D | B | 5 E | A | 7 F | A | 3 G | B | 3 H | C,D | 6 I | C,D | 2 J | E | 5 K | F,G, H | 4 L | F,G, H | 3 M | I | 12 N | J,K | 8 a) Construct the CPM network. b) Determine the critical path, the critical activities and the project completion time. c) Compute Total float & Free floats for Non-Critical activities.	[L3][CO2]	**[12M]**
9	Find out the completion time and the critical activities for the following project:  	[L2][CO2]	**[12M]**
10	A small project consisting of eight activities has the following characteristics: **Activity** | **Dependency** | **Duration(days)** A | - | 7 B | - | 3 C | A | 6 D | B | 3 E | D,F | 3 F | B | 2 G | C | 3 H | E,G | 2 a) Construct the CPM network. b) Determine the critical path, the critical activities and the project completion time. c) Compute Total float & Free floats for Non-Critical activities	[L3][CO2]	**[12M]**

UNIT –III
CPM COST MODEL, COST UPDATING, RESOURCES ALLOCATION

<table>
<tr><td rowspan="2">1</td><td>a</td><td>Explain briefly about project cost. Also explain what are the steps involved in total project cost.</td><td>[L1][CO3]</td><td>[6M]</td></tr>
<tr><td>b</td><td>Differentiate between project cost and optimum duration in detail with neat sketch</td><td>[L2][CO3]</td><td>[6M]</td></tr>
<tr><td>2</td><td colspan="3">The above table shows the data about durations and cost if various activities of the network shown in the figure.
Table:
<table><tr><th>Activity</th><th>Normal duration (weeks)</th><th>Normal Cost (Rs)</th><th>Crash duration(weeks)</th><th>Crash Cost(Rs)</th></tr><tr><td>1-2</td><td>4</td><td>4000</td><td>2</td><td>12000</td></tr><tr><td>2-3</td><td>5</td><td>3000</td><td>2</td><td>7500</td></tr><tr><td>2-4</td><td>7</td><td>3600</td><td>5</td><td>6000</td></tr><tr><td>3-4</td><td>4</td><td>5000</td><td>2</td><td>10000</td></tr></table>The project overhead costs are Rs.2000 per week.Find the optimum duration and cost associated with it, Also, Draw the least cost network.
 
Figure</td><td>[L2][CO4]</td><td>[12M]</td></tr>
<tr><td>3</td><td colspan="3">Give the information about various activities of network shown in fig.
<table><tr><td>Activity</td><td>Normal duration (days)</td><td>Normal Cost (Rs.)</td><td>Crash duration (days)</td><td>Crash cost (Rs.)</td></tr><tr><td>1-2</td><td>9</td><td>8000</td><td>6</td><td>9500</td></tr><tr><td>2-3</td><td>5</td><td>5000</td><td>3</td><td>5500</td></tr></table>The project overhead costs are @ Rs. 300.0 per day. Determine
(a) Direct cost-duration relationship
(b) Total cost-duration relationship and the corresponding least cost plan (network)</td><td>[L3][CO4]</td><td>[12M]</td></tr>
<tr><td>4</td><td colspan="3">a) Explain about Indirect project cost and Direct project cost.
b) Explain slope of direct cost curve</td><td>[L1][CO4]</td><td>[12M]</td></tr>
<tr><td>5</td><td colspan="3">What do you understand by updating? Why is it essential?</td><td>[L2][CO3]</td><td>[12M]</td></tr>
</table>

6	The above figure shows the network of a project which is to be updated at the end of 12days. The following conditions exist at the time of updating: 1. Activity 1-4 was completed as originally planned. 2. Activity 1-3 was execute more rapidly then originally scheduled, and it took 8days for its completion. 3. Activity 3-4 commenced following the completion of activity 1-3 and was finished at the end of 11th day. 4. Activity 4-5 was commenced following the completion of activity 3-4 (i.e., at the end of 11th day), and still requires 6 more days for its completion. 5. Completion of activity 1-2 was delayed drastically, and it still requires 10 more days for its completion. 6. Activity 2-7 will commence following the completion of activity 1-2 and will require 9 days for its completion instead of 6 days originally estimated. 7. The time required to perform activity 5-8 has been revised, based on the experience on the project, gained to this point. It now requires 10 days in the place of 6 days originally estimated. 8. No other activities have been started, and the original time estimates for these activities still appear to be accurate. Update the network, and determine the revised critical path.  **Figure**	**[L2][CO4]**	**[12M]**
7	a)What are the data required for updating b)What are the steps involved in the process of updating	**[L1][CO4]** **[L1][CO3]**	**[6M]** **[6M]**
8	Explain the process involved in resources smoothing network analysis	**[L2][CO3]**	**[12M]**
9	Explain about Recourses usage profiles histograms	**[L3][CO4]**	**[12M]**
10	Discuss about a) Resources smoothing b) Resources Levelling	**[L3][CO4]**	**[12M]**

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UNIT –IV

MATERIAL MANAGEMENT & QUALITY MANAGEMENT

1	Discuss the Material Procurement process in construction organization	[L2][CO4]	**[12M]**
2	What are the different functions of material management	[L2][CO5]	**[12M]**
3	a) What are the advantages of centralized and local purchasing b) What are the advantages and disadvantages of early and late procurement	[L2][CO4] [L2][CO4]	**[6M]** **[6M]**
4	What are the inventory- related cost? Explain in detail	[L1][CO5]	**[12M]**
5	What are the functions of inventories	[L1][CO4]	**[12M]**
6	Discuss about Total quality management.	[L2][CO5]	**[12M]**
7	Explain briefly a) Inspection b) Quality control c) Quality assurance in projects	[L2][CO5]	**[12M]**
8	What are the objectives in cost of quality and organization?	[L1][CO5]	**[12M]**
9	Define cost of quality. Explain in detail	[L1][CO5]	**[12M]**
10	Define Audit? Explain different types of Audit.	[L1][CO5]	**[12M]**

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UNIT –V

SAFETY MANAGEMENT AND CONSTRUCTION CONTRACT

1	What are the safety measures to be adopted in work sites and explain principles of safety?	[L2][CO5]	**[12M]**
2	What are the common causes of construction site accidents?	[L1][CO6]	**[12M]**
3	What are the preventive measures to be taken during accidents?	[L1][CO6]	**[12M]**
4	What is cost of accidents? Explain briefly about direct and indirect expense.	[L1][CO6]	**[12M]**
5	What are the key element to be taken ensured in safety and health management system?	[L1][CO6]	**[12M]**
6	Explain about contract document.	[L2][CO5]	**[12M]**
7	What are different types of contract? Explain briefly.	[L1][CO6]	**[12M]**
8	Briefly explain about a)Lump-sum contract b)Unit price contract c) Turnkey contract	[L1][CO5]	**[12M]**
9	What is bid? What are the various stages and types of bid?	[L1][CO5]	**[12M]**
10	Write a short note on CPWD contract conditions?	[L1][CO5]	**[12M]**

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