



**SIDDHARTHA INSTITUTE OF SCIENCE AND TECHNOLOGY:: PUTTUR  
(AUTONOMOUS)**

Siddharth Nagar, Narayanavanam Road – 517583

**QUESTION BANK (DESCRIPTIVE)**

**Subject with Code:** CPM (18CE0122)

**Course & Branch:** B.Tech - CE

**Year & Sem:** III-B.Tech& II-Sem

**Regulation:** R18

**UNIT –I**

**CONSTRUCTION PROJECT & CONSTRUCTION PLANNING**

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

## UNIT –II

PERT & CPM Network Analysis

1	a	Define float?	[L1][CO2]	[2M]																																																										
	b	What are the different types of time estimates	[L1][CO2]	[2M]																																																										
	c	Define critical path and critical activity	[L1][CO2]	[2M]																																																										
	d	Define forward pass and backward pass.	[L1][CO2]	[2M]																																																										
	e	Define PERT	[L1][CO2]	[2M]																																																										
2	a)	Define PERT. Discuss in detail.	[L1][CO2]	[5M]																																																										
	b)	What are the different types of time estimates involved in PERT? Explain in detail	[L2][CO2]	[5M]																																																										
3	A project schedule has the following characteristics		[L2][CO2]	[10M]																																																										
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	b)	Find the estimated duration and variance																																																												
	c)	Find the critical path and expected project completion time																																																												
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H	E, F	1	4	7																																																										
5	Explain in detail about $\beta$ - Distribution curve and expected duration.		[L2][CO2]	[10M]																																																										

**6** A project has the following characteristics

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.

[L2][CO2] [10M]

**7** What is CPM network analysis? Explain in detail. [L1][CO2] [10M]

**8** a) Define Duration of an activity? What are the activity times? Explain  
 b) Define Float? What are the types of float? [L1][CO2] [5M]  
[L1][CO2] [5M]

The following details are available regarding a project:

**9**

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.

[L2][CO2] [10M]

**10** Find out the completion time and the critical activities for the following project:

[L2][CO2] [10M]

11	A small project consisting of eight activities has the following characteristics:  <table border="1" data-bbox="231 179 826 504"><thead><tr><th>Activity</th><th>Dependency</th><th>Duration( days)</th></tr></thead><tbody><tr><td>A</td><td>-</td><td>7</td></tr><tr><td>B</td><td>-</td><td>3</td></tr><tr><td>C</td><td>A</td><td>6</td></tr><tr><td>D</td><td>B</td><td>3</td></tr><tr><td>E</td><td>D,F</td><td>3</td></tr><tr><td>F</td><td>B</td><td>2</td></tr><tr><td>G</td><td>C</td><td>3</td></tr><tr><td>H</td><td>E,G</td><td>2</td></tr></tbody></table> <p data-bbox="215 537 1236 683">a) Construct the CPM network. b) Determine the critical path, the critical activities and the project completion time. c) Compute Total float &amp; Free floats for Non-Critical activities</p>	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	[L3][CO2]	[10M]
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D	B	3																												
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F	B	2																												
G	C	3																												
H	E,G	2																												

## UNIT –III

CPM COST MODEL, CPM UPDATING, RESOURCES ALLOCATION

<b>1</b>	<b>a</b>	Write any advantages of CPM?	[L1][CO3]	[2M]																								
	<b>b</b>	Define Project cost?	[L1][CO3]	[2M]																								
	<b>c</b>	Define normal & crash cost ?	[L1][CO3]	[2M]																								
	<b>d</b>	What is resource levelling?	[L1][CO3]	[2M]																								
	<b>e</b>	What are the different process involved in updating	[L1][CO3]	[2M]																								
<b>2</b>	Draw the network diagram and determine the critical path for the following project:		[L3][CO3]	[10M]																								
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<b>3</b>	Discuss in detail about project cost.	[L2][CO3]	[10M]																									
<b>4</b>	Differentiate between project cost and optimum duration in detail with neat sketch	[L2][CO3]	[10M]																									
<b>5</b>	Explain in detail about cost optimization	[L1][CO3]	[10M]																									
<b>6</b>	What are the various steps involved in time cost optimization	[L1][CO3]	[10M]																									
<b>7</b>	What is the method involved in process of updating in critical path method	[L1][CO3]	[10M]																									
<b>8</b>	Explain the process involved in resources smoothing network analysis	[L2][CO3]	[10M]																									
<b>9</b>	Explain the role of contracting in network analysis for cost optimization	[L2][CO3]	[10M]																									
<b>10</b>	Explain briefly about project cost. Also explain what are the steps involved in total project cost.	[L2][CO3]	[10M]																									
<b>11</b>	What are the advantages and disadvantages of CPM	[L1][CO3]	[10M]																									

**UNIT –IV****TENDERS & CONTRACTS**

<b>1</b>	<b>a</b>	What is Tender and Contract?	[L1][CO4]	<b>[2M]</b>
	<b>b</b>	What are the different types of contract?	[L1][CO4]	<b>[2M]</b>
	<b>c</b>	What are the different conditions of contract? Mention any four.	[L1][CO4]	<b>[2M]</b>
	<b>d</b>	What is a tender notice?	[L1][CO4]	<b>[2M]</b>
	<b>e</b>	What is a contract document?	[L1][CO4]	<b>[2M]</b>
<b>2</b>		Explain briefly about tender notice.	[L2][CO4]	<b>[10M]</b>
<b>3</b>		Give a brief note on submission of tender.	[L2][CO5]	<b>[10M]</b>
<b>4</b>		Write about tender form.	[L2][CO4]	<b>[10M]</b>
<b>5</b>		What are the different types of tenders? Explain briefly.	[L1][CO5]	<b>[10M]</b>
<b>6</b>		What are the time limits to be taken place for tender notice? Explain briefly	[L1][CO4]	<b>[10M]</b>
<b>7</b>		Explain briefly about contract document.	[L2][CO4]	<b>[10M]</b>
<b>8</b>		What are different types of contract? Explain briefly.	[L1][CO4]	<b>[10M]</b>
<b>9</b>		Briefly explain about a)Lump-sum contract b)Unit price contract c) Turnkey contract	[L2][CO4]	<b>[10M]</b>
<b>10</b>		Write short notes on: a) Earnest Money Deposit b) Security Deposit	[L1][CO5]	<b>[10M]</b>
<b>11</b>		What are the conditions carried out at during contract?	[L1][CO4]	<b>[10M]</b>

**UNIT –V****QUALITY MANAGEMENT & SAFETY MANAGEMENT**

<b>1</b>	<b>a</b>	What are the objectives of quality construction?	[L1][CO5]	<b>[2M]</b>
	<b>b</b>	Define cost of quality.	[L1][CO5]	<b>[2M]</b>
	<b>c</b>	Write any four principles of safety.	[L1][CO5]	<b>[2M]</b>
	<b>d</b>	What are the different types of project quality?	[L1][CO5]	<b>[2M]</b>
	<b>e</b>	Define audit? List out types of audit.	[L1][CO5]	<b>[2M]</b>
<b>2</b>		Briefly discuss about Total quality management.	[L2][CO5]	<b>[10M]</b>
<b>3</b>		What are the safety measures to be adopted in work sites and explain principles of safety?	[L2][CO6]	<b>[10M]</b>
<b>4</b>		What are the common causes of construction site accidents?	[L1][CO6]	<b>[10M]</b>
<b>5</b>		What are the preventive measures to be taken during accidents?	[L1][CO6]	<b>[10M]</b>
<b>6</b>		What is cost of accidents? Explain briefly about direct and indirect expense.	[L1][CO6]	<b>[10M]</b>
<b>7</b>		Explain briefly a) Quality control b) Quality assurance in projects	[L2][CO5]	<b>[10M]</b>
<b>8</b>		What are the key elements to be taken ensured in safety and health management system?	[L1][CO6]	<b>[10M]</b>
<b>9</b>		What are the objectives in cost of quality and organization?	[L1][CO5]	<b>[10M]</b>
<b>10</b>		Define cost of quality. Explain in detail	[L2][CO5]	<b>[10M]</b>
<b>11</b>		Define Inspection, Quality control and Quality assurance in projects in detail.	[L1][CO5]	<b>[10M]</b>

**Prepared by:**  
**Mr. D. SREEKANTH**  
**Asst. Professor/CE**