



**SIDDHARTH INSTITUTE OF ENGINEERING & 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]	[5M]
	b)	What are the common errors in network drawings? Explain with sketches?	[L2][CO1]	[5M]

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]			
	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			
4	A project schedule has the following characteristics		[L2][CO2]	[10M]			
	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			
5	Explain in detail about β - Distribution curve and expected duration.		[L2][CO2]	[10M]			

6	A project has the following characteristics	[L2][CO2]	[10M]																																																																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Activity</th> <th rowspan="2">Predecessor</th> <th colspan="3">Duration(weeks)</th> </tr> <tr> <th>t_o</th> <th>t_m</th> <th>t_p</th> </tr> </thead> <tbody> <tr><td>A</td><td>-</td><td>0.5</td><td>2</td><td>7</td></tr> <tr><td>B</td><td>A</td><td>1</td><td>3</td><td>5</td></tr> <tr><td>C</td><td>A</td><td>1</td><td>5</td><td>7</td></tr> <tr><td>D</td><td>B</td><td>3</td><td>5</td><td>3</td></tr> <tr><td>E</td><td>C</td><td>2</td><td>4</td><td>9</td></tr> <tr><td>F</td><td>C</td><td>3</td><td>7</td><td>9</td></tr> <tr><td>G</td><td>D,E</td><td>4</td><td>6</td><td>8</td></tr> <tr><td>H</td><td>F</td><td>6</td><td>8</td><td>10</td></tr> <tr><td>I</td><td>G, H</td><td>2</td><td>6</td><td>8</td></tr> <tr><td>J</td><td>G, H</td><td>5</td><td>8</td><td>8</td></tr> <tr><td>K</td><td>I</td><td>1</td><td>3</td><td>8</td></tr> <tr><td>L</td><td>J</td><td>3</td><td>7</td><td>8</td></tr> </tbody> </table>				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
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.																																																																							

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] [L1][CO2]	[5M] [5M]
----------	--	------------------------	--------------

9	The following details are available regarding a project:	[L2][CO2]	[10M]																																													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Activity</th> <th>Dependency</th> <th>Duration (months)</th> </tr> </thead> <tbody> <tr><td>A</td><td>-</td><td>2</td></tr> <tr><td>B</td><td>-</td><td>5</td></tr> <tr><td>C</td><td>-</td><td>4</td></tr> <tr><td>D</td><td>B</td><td>5</td></tr> <tr><td>E</td><td>A</td><td>7</td></tr> <tr><td>F</td><td>A</td><td>3</td></tr> <tr><td>G</td><td>B</td><td>3</td></tr> <tr><td>H</td><td>C,D</td><td>6</td></tr> <tr><td>I</td><td>C,D</td><td>2</td></tr> <tr><td>J</td><td>E</td><td>5</td></tr> <tr><td>K</td><td>F,G, H</td><td>4</td></tr> <tr><td>L</td><td>F,G, H</td><td>3</td></tr> <tr><td>M</td><td>I</td><td>12</td></tr> <tr><td>N</td><td>J,K</td><td>8</td></tr> </tbody> </table>				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
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.																																																

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>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</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]
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																												

UNIT –III

CPM COST MODEL, CPM UPDATING, RESOURCES ALLOCATION

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

UNIT –IV**TENDERS & CONTRACTS**

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

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

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

Prepared by:
Ms.C.SAILAJA
Asst. Professor/CE