Reg. No.				T .
	Reg. No.			

(A constituent unit of MAHE, Manipal)

V SEMESTER B. TECH (CIVIL) END SEMESTER EXAMINATIONS JANUARY 2021

SUBJECT: CONSTRUCTION MANAGEMENT [CIE- 3153]
Date of Exam: 04 02 2021 Time of Exam: 9 AM - 12 PM , Max. Marks: 50

Instructions to Candidates:

Answer ALL the questions & missing data may be suitably assumed.

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	For the list of a determine the p the end of 7th da	roject dur	en in ation.	the tal ii) Wha	ole be at is th	low, ie %	i) Dra	aw a r	neat I for a	oar ch	nart ai	nd at	
9	κ	Activity	ID	Start	date	Du	ration	(days	s)				
1A		A		2		i	4						3
	W	В		3			5						_
		С	8	4			4						
-		<u>D</u>		5	2		5					2	
		E		5			4		_				
- "	F 0	F		9			2						
	For the sequen network and nur	ce of act	Ivities	listed	in the	tab	le bel	ow, dr	aw a	neat	A-0-	-A	
1B	Thetwork and hur	ilbei the e	vents.										5
	Activity	АВ	С	D	E	Т	F	GH		JK		٦!	
	Predecessor	A		G, H			B, C		H	H	. J. K		
	Identify the erro	rs in the			<u> </u>			et the					
	Identify the errors in the network shown below. Correct the network to satisfy the following interdependency: Activity E is the immediate successor to B and C.												
	Completion of activities D, E and F marks the completion of the project. Other												
F	conditions remain as shown in the network diagram.												
40													
1C	8				3	D							2
			E	3/	I							- 1	
		A .				The same of the sa	(5)						
	(1)) -A	2)	C	E	Market Ma							
				5	F								- 1
					4								
	Evoluin the ciani	Figonog of	contra	l lineit t		Iv-	DED	1		8.641		\perp	
2A	Explain the significance of central limit theorem in PERT analysis. With the help of a neat sketch, explain the significance of probability factors 0, +1 and -1 on								3				
			rie sigi	iirican	ce of	מסוכ	ability	Tactor	s U, -	-1 and	d -1 o	n	
	project completion							V .	_			\perp	
	For the activity										rk, an	d	
2B	determine i) ever					_							5
	Activity 1-2		4 2-6			4-8			6-7	7-9	8-9		
	Duration 2	4 5	3	7	6	10	0	8	7	9	8		

	The expected du	tration of	o construction	projec	t in 22 days lf t	ha variance of the		
	The expected duration of a construction project is 32 days. If the variance of the critical path is 8.833, determine i) the probability that the project will finish at							
	least 2 days early ii) the completion date with 90 % confidence level.							
	least 2 days ear	ly ii) the co	ompletion date		0 % confidence	level.	2	
2C	Z (+) Probability % Z (-) Probability %							
	1000 1000	0.6 7	2.57	0.6	27.43			
		0.7 7	5.80	0.7	24.20	25		
		1.2 8	8.49	1.2	11.51			
	19	1.3 9	0.32	1.3	9.68			
	There are three	activities v	viz., shuttering	, placi	ng reinforcemer	nts and concreting		
						uires 4 hours, the		
	second activity (placing reinforcements) requires 2 hours and the third							
3A	I C C C C C C C C C C C C C C C C C C C							
	A.M. and finish at 12.00 noon.							
	For the above-m	entioned:	set of activities	s, i) wo	ork out all activit	y times and floats		
	ii) identify the cri							
	iii) discuss the si	gnificance	of cost slope	in time	e-cost tradeoff.			
3B	The repetitive	projects s	such as build	ding o	construction fol	low deterministic	2	
-	approach. Justify		¥1					
	For the activity	details pr	rovided in the	table	below, determ	ine the optimum		
	duration and min	imum cos	t. Indirect cost	of the	project is ₹ 500	per day.		
					6 TO.			
	Activity	t _n	to		C _n	Co		
3C	10-20 8 6 800 1800							
36	10-30 10 6 1800 5800							
	10-40 7 5 2800 5400							
	20-50							
	30-50 9 7 3800 4300							
	40-50 7 6 3300 3900							
1					JOUL	0300		
3	Discuss the sig	nificance	of 'on tippeon		23000 2			
40					ific' and 'job-sp	pecific' factors in		
4A	selection of a co	nstruction	equipment. L		ific' and 'job-sp		4	
4A	selection of a co mechanization in	nstruction construct	equipment. Lion.	ist any	fic' and 'job-sp 2 advantages	pecific' factors in and limitations of	4	
4A 4B	selection of a co mechanization in Bring out the i)	nstruction construct essential	equipment. Lion.	ist any advant	fic' and 'job-sp 2 advantages	pecific' factors in	4	
3	selection of a co mechanization in	nstruction construct essential	equipment. Lion.	ist any advant	fic' and 'job-sp 2 advantages	pecific' factors in and limitations of		
3	selection of a co mechanization in Bring out the i) various types of e List all the cost	nstruction construct essential equipment compone	equipment. Lion. I features ii) t maintenance. ents aggregati	advani	ific' and 'job-sp 2 advantages tages and iii) o	pecific' factors in and limitations of		
4B	selection of a comechanization in Bring out the i) various types of List all the cost construction equi	nstruction construct essential equipment compone ipment. Ex	equipment. Lion. I features ii) to maintenance ents aggregation	advant	ific' and 'job-sp' 2 advantages ages and iii) of the 'operating	pecific' factors in and limitations of disadvantages of cost' of a large	3	
4B	selection of a comechanization in Bring out the i) various types of electronic the cost construction equipage.	essential equipment compone ipment. Extraordinate over the compone ipment over	equipment. Lion. features ii) to maintenance ents aggregation any two wring and open	advant	ific' and 'job-sp' 2 advantages ages and iii) of the 'operating	pecific' factors in and limitations of disadvantages of	3	
4B	selection of a comechanization in Bring out the i) various types of List all the cost construction equi	essential equipment compone ipment. Extraordinate over the compone ipment over	equipment. Lion. features ii) to maintenance ents aggregation any two wring and open	advant	ific' and 'job-sp' 2 advantages ages and iii) of the 'operating	pecific' factors in and limitations of disadvantages of cost' of a large	3	
4B 4C	selection of a comechanization in Bring out the i) various types of electron equipments the properties of the propertie	essential equipment compone ipment. Extraording the formal compone ipment in the formal compone ipment in the formal compone in the	equipment. Lion. I features ii) to maintenance ents aggregati color any two wring and opeollowing details	advantadvantadvantadvantadvantadvantadvantadvantadvantadvantadvantadvantadvantadvantadvantadvantadvantadvantad	ific' and 'job-sp 2 advantages tages and iii) of the 'operating	pecific' factors in and limitations of disadvantages of cost' of a large ctrically operated	3	
4B	selection of a comechanization in Bring out the i) various types of electron equipments and the cost construction equipments are proposed in the proposed in	essential equipment compone ipment. Extraobable over the following the following the following the compone ipment of the following the followi	equipment. Lion. I features ii) to maintenance ents aggregation any two wring and opeoplowing details ost of set-up-	advani ng for erating s. ₹ 90,0	ific' and 'job-sp 2 advantages tages and iii) of the 'operating cost of an election	pecific' factors in and limitations of disadvantages of cost' of a large ctrically operated costs- ₹4,50,000,	3	
4B 4C	selection of a co mechanization in Bring out the i) various types of e List all the cost construction equi Determine the properties of the batching plant has Power required- useful life- 18 years	essential equipment compone ipment. Extraorbable over the following the following, hour ears, hour	equipment. Laion. I features ii) to the maintenance ents aggregation of set-up-results used per years.	advantage advan	ific' and 'job-sp 2 advantages tages and iii) of the 'operating cost of an ele 00,000, set-up of	pecific' factors in and limitations of disadvantages of cost' of a large ctrically operated costs- ₹4,50,000, alue- ₹ 3,00,000,	3	
4B 4C	selection of a comechanization in Bring out the i) various types of a List all the cost construction equidetermine the proper required a power required useful life- 18 ye bank interest @ 1	essential equipment compone forment. Exprobable over the first transfer of transfer of the first transfer of transfer of the first transfer of transfer of the first transfer of transfer of the first transfer of the first transfer of transfer	equipment. Lion. I features ii) I maintenance. Intended aggregation of set-up- is used per yearingencies, and	advantage advan	ific' and 'job-sp 2 advantages tages and iii) of the 'operating cost of an election 00,000, set-up of 000, salvage variactor @ 12 %, of	pecific' factors in and limitations of disadvantages of cost' of a large ctrically operated costs- ₹4,50,000, alue- ₹ 3,00,000, electricity @ ₹ 15	3	
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