Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – SUMMER • 2015

Subject Code:170601 **Date: 01/05/2015**

Subject Name: Construction Management & Equipments

Time:02.30pm-05.00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Discuss objectives of construction management and Explain Planning, Scheduling and controlling as a prime focal function of Construction Management. **07**

(b) What is critical path? Distinguish between CPM and PERT. **07**

Q.2 **(a)** The following network shown in figure 1 has the estimated duration for each activity marked. Determine the critical path. Also determine total float and free Float for each activity. **07**

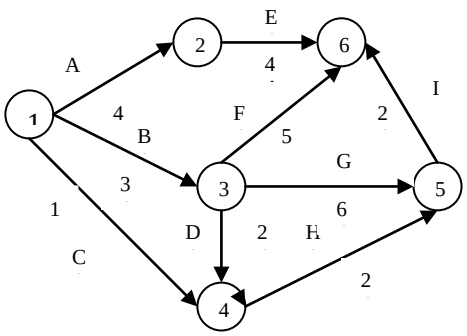

Figure 1

(b) Explain in detail Resources Smoothing method of Resources allocation problems. **07**

OR

(b) Illustrate the method of updating a network during its execution period. **07**

Q.3 **(a)** A construction project consists of 12 activities. The predecessor relationships are identified by their node numbers as indicated below. Draw the network diagram. **07**

ACTIVITY	IDENTITY	ACTIVITY	IDENTITY	ACTIVITY	IDENTITY	ACTIVITY	IDENTITY
A	(1,2)	D	(2,7)	G	(4,6)	J	(7,8)
B	(2,4)	E	(3,4)	H	(5,6)	K	(6,8)
C	(2,3)	F	(3,5)	I	(5,7)	L	(8,9)

(b) What is Gantt bar chart? Explain with the help of suitable example, the method of preparing bar chat. **07**

OR

Q.3 **(a)** Explain in brief the following soil fundamentals. **07**

1. Materials properties
2. Soil weight – volume relationships

Q.3	**b(1)**	Explain importance of soil fundamentals related to swell, shrinkage etc. with reference to large scale earth excavation, moving and compaction projects.	**02**
	b(2)	Estimate book value of equipment at the end of each year of ownership from following data: • Initial book value of equipment = Rs. 27,00,000/- • Period of ownership = five years. • Salvage value = Rs.3,00,000/- • method of depreciation = sinking fund method take i = 18%	**05**
Q.4	**(a)**	What do you understand by Job layout? What are the factors affecting the job lay out?	**07**
	(b)	Explain in detail various financial aspects of procuring construction equipments.	**07**
		OR	
Q.4	**(a)**	Find out sinking fund for accumulating 65/- lakhs in five years at the rate of interest of 10%.	**07**
	(b)	Enlist various methods of estimating depreciation and explain any one in detail.	**07**
Q.5	**(a)**	Write short notes on following. 1. Crawler tractor 2. Clam shell	**07**
	(b)	What are the uses of power shovels? Describe with neat sketch basic parts and Operation of power shovel.	**07**
		OR	
Q.5	**(a)**	Discuss the effect of grade of slope of a haul road on the tractive effort.	**07**
	(b)		
	1.	A four cycle engine when tested under given condition of tempreture is 34º c. At pressure 720 mm of Hg was found 75.76 Hp. Determine the Hp for standard condition.	**04**
	2.	Write a brief note on coefficient of traction.	**03**

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