B.Tech. SEM -V (Civil) 2014 Course (CBCS) : SUMMER - 2019
SUBJECT: ENGINEERING PROJECT MANAGEMENT

Day: Monday
Date: 13/05/2019
S-2019-2651
Time: 10.00 AM TO 01.00 PM
Max Marks: 60

N.B. :

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data, if necessary.
4) Use of non-programmable calculator is allowed.

Q.1 **a)** What is project life cycle of building? **(05)**

b) Enlist different types of organizations and prepare organization chart of any one? **(05)**

OR

Q.1 **a)** What are the different categories of project? **(05)**

b) Discuss staffing and leadership as functions of manager. **(05)**

Q.2 Draw the network find the critical path and EST, EFT, LST, LFT and total float from given data. **(10)**

Activity	1-2	1-3	2-3	2-4	3-5	4-5	4-6	5-6	5-7	6-8	7-8
Duration (Days)	4	7	7	5	6	4	10	6	8	6	5

OR

Q.2 Draw the PERT network and find expected time of completion of project. Also find slack and standard deviation. **(10)**

Activity	t_o	t_L	t_P
1-2	2	4	6
1-4	6	6	6
1-3	6	12	24
2-3	2	5	8
2-5	12	14	28
3-4	15	24	45
3-6	3	6	9
4-6	9	15	27
5-6	4	10	16

Q.3 Draw the network and find out all crash solution from given data. Indirect cost Rs.300/- per day. **(10)**

Activity	Duration		Cost	
	Normal	Crash	Normal	Crash
1-2	6	4	1400	1900
1-3	8	5	2000	2800
2-3	4	2	1100	1500
2-4	3	2	800	1400
3-4	Dummy	Dummy	-	-
3-5	6	3	900	1600
4-6	10	6	2500	3500
5-6	3	2	500	800

P.T.O.

OR

Q.3 **a)** What is the difference between resource leveling and resource smoothening? Explain with example. **(05)**

b) Enlist different steps and tabular forms involved in updating of network. **(05)**

Q.4 **a)** What are the objectives of material management? **(05)**

b) Define EOQ, BOQ, AOQ, lead time, stock out. **(05)**

OR

Q.4 Carry out the ABC analysis for data given in table below.

Item	1	2	3	4	5	6	7	8	9	10	11	12
Units	7000	24000	1500	600	38000	40000	60000	3000	300	29000	11500	4100
Unit cost Rs.	5	3	10	22	1.50	0.5	0.20	3.50	8.0	0.40	7.10	6.20

Q.5 Solve the following LPP graphically maximize **(10)**

$$z = 45x_1 + 30x_2$$

subject to

$$5x_1 + 3x_2 \leq 80$$
$$4x_1 + 6x_2 \leq 100$$
$$x_1, x_2 \geq 0$$

OR

Q.5 Solve the following LPP by simplex method minimize **(10)**

$$z = 12x_1 + 20x_2$$

Subject to

$$6x_1 + 8x_2 \geq 100$$
$$7x_1 + 12x_2 \geq 120$$
$$x_1, x_2 \geq 0$$

Q.6 **a)** What is the quality manual check list? **(05)**

b) Discuss objectives of TQM. **(05)**

OR

Q.6 **a)** Give the application of six sigma in construction industry. **(05)**

b) Discuss applications of TQM in civil engineering. **(05)**

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