

Total No. of Questions : 10]

SEAT No. :

P2918

[Total No. of Pages : 4

[5669]-507

T.E. (Civil)

**PROJECT MANAGEMENT & ENGINEERING ECONOMICS**

(2015 Pattern)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6., Q.7 or Q.8, Q.9 or Q.10.
- 2) Neat diagrams must be drawn whenever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

Q1) a) What are the scientific methods of planning and management? Explain with the help of suitable example. [5]

b) List out the activities to be performed for a task 'construction of brick wall'. Draw network diag. Using listed activities. [5]

OR

Q2) a) What are the salient features of arrow type and circle type network diagram? [5]

b) Construct a correct circle diagram using the data given below. [5]

- i) Event A is the first and event 'E' is the last.
- ii) Event B succeeds A and precedes D.
- iii) Event C succeeds B and precedes E
- iv) Event C restrains occurrence of event D.
- v) Event E is successor of event D.

Q3) a) Enlist the duties of store keeper and explain material purchasing process. [5]

b) What are the characteristics of good site layout? Will it help to avoid accidents on site? Justify. [5]

OR

P.T.O.

**Q4) a)** Define inventory and list out its types. Explain one of the method of inventory control. [5]

b) What are the points to be considered while preparing safety programme of construction site? [5]

**Q5) a)** What do you understand by resource smoothing and resource leveling? Explain their significance. [5]

b) Define updating of network diagram when to update network diag. [5]

c) The activities and required duration of small work are shown in table underneath. Review of work was taken after 7 days then the following conditions exist. Draw updated network diagram and what will be the change in project duration? [8]

Activity	1-2	1-3	2-4	3-4	3-5	4-5	4-6	5-6
Duration (week)	5	5	4	6	7	4	7	5

Conditions :

i) Activity 1-2 and 1-3 was complete as per originally planned.

ii) Activity 2-4 and 3-4 delayed drastically and requires 8 and 10 more days respectively.

iii) Due to arrival of new machine Activity 3-5 completed very fastly and required 5 days in place of 7 days.

iv) No other activities has been started and the time require for completion is still appears to be accurate.

OR

**Q6) a)** Write down about the application of project management software's in housing projects. [5]

b) What do you know about earned value analysis? How economic health of any project analysed by using it? [5]

- c) Data related to small project shown in table below : [8]
- Draw the network diag. and find out cost of project before crashing. Consider indirect expenses Rs. 200 per week.
  - Crash the network diag. by 7 week. Whether it is optimum duration, if yes find optimum cost.

Activity	Normal time (week)	Normal cost (Rs.)	Crash time (week)	Crash cost (Rs.)
1-2	8	800	5	950
1-3	5	500	3	700
1-4	9	600	6	1050
2-3	10	900	8	1300
3-5	5	700	3	1100
4-5	6	1200	5	1500

- Q7)** a) Economic health of any country depends upon infrastructure development, Justify. [6]
- b) Explain law of demand and supply with the help of sketch. What are the factors affecting on demand and supply? [6]
- c) What is the difference between simple and compound interest payable if Ms. Swati deposited Rs. 10,000 in bank for of yrs. at the rate of interest 5.5 percent per yr. [4]

OR

- Q8)** a) What are the types of elasticity? Explain in brief. [6]
- b) Explain law of substitution with help of suitable example. List out its limitations. [6]
- c) Ms. Varsha bought a Air cooler for Rs. 30,000, she paid tax of Rs. 5,000 and Rs. 150 for transport. If she sold it to a customer for Rs. 40,000, what was the percentage profit or loss? [4]

- Q9)** a) Define Annuities. What are the kinds of annuities? [6]
- b) Technical and economic appraisals are must to check project profitability, comment. [6]
- c) The cost of project Rs. 20 lac. Annual cash inflows for the next 5 yrs. Rs. 5,00,000 per yr. What is payback period for the project at discount rate of 7%? [4]

OR

- Q10)** a) What do you know about NPV and Benefit cost ratio method? Compare the project by both methods and state its feasibility if project cost is Rs. 50 lac. has net cash flow of Rs. 12 lac for a period 5 yrs. firm expect returns at 10% per annum. [8]
- b) Write a short note on any two : [8]
- Break even analysis
  - IRR and ARR method
  - Role of project management consultant

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