[4958]-110

T.E. Civil

PROJECT MANAGEMENT & ENGINEERING ECONOMICS

(2008 Course) (Semester - II)

Time : 3 Hours] *[Max. Marks :100*

Instructions to the candidates:

  1) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q6 from Section I, And Sovle Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12 from Section II.*

  2) *Figures to the right indicate full marks.*

SECTION - I

Q1) a) Write a note on Project categories. **[4]**

  b) What are the different types of organization structures? Explain merits and demerits of any one. **[6]**

  c) Differentiate between CPM and PERT method. **[5]**

  d) Define Activity, event and critical event. **[3]**

OR

Q2) Listed below are the activities of a project along their durations.

Activity	A	B	C	D	E	F	G	H	I
Immediate Predecessors	-	-	A	C	C	B	D	E,F	G,H
Duration (months)	5	2	3	4	2	4	7	6	1

  a) Draw AOA network and calculate the total project duration. Highlight the critical path. **[6]**

  b) Calculate EST, EFT, LST, LFT Total float, Free-float and Independent float. Write in tabular form with sample calculation. **[12]**

Q3) a) Define cost slope and What do you understand by crashing of network?**[4]**

b) Following information pertains to a construction project. The Indirect cost of Project is Rs. 200/- week. Carry out step by step crashing and find out optimum Duration and cost of project. **[12]**

Activity	Normal time (weeks)	Normal cost (Rs.)	Crash time (weeks)	Crash Cost (Rs.)
1-2	4	4000	2	12000
2-3	5	3000	2	7500
2-4	7	3600	5	6000
3-4	4	5000	2	10000

OR

Q4) Following table shows the data of a small construction project. **[16]**

a) Draw the time scale version diag, manpower requirement also Histogram and EFR before leveling.

b) Carry out resource leveling if max. Limit of manpower is 8. What will be the increase in duration and EFR after leveling?

Activity	Duration (Days)	Manpower
1-2	5	4
1-3	6	3
2-3	0	0
2-4	4	5
3-4	7	8

Q5) a) What are the functions of material manager. **[4]**

b) Write a note on break even analysis. **[4]**

c) Define **[4]**

  i) Safety stock

  ii) Lead time

  iii) EOQ

  iv) Inventory

d) List out step by step procedure to conduct ABC analysis. **[4]**

OR

Q6) a) What are the assumptions made in EOQ. **[4]**

b) Segregate the items as per their annual usage and plot ABC curve **[12]**

Sr.No.	Item	Annual usage (Rs.)
1	Cement	400000
2	Sand	100000
3	Wash basin	50000
4	steel	320000
5	Aggregate (12mm)	120000
6	Aggregate (19mm)	130000
7	Nails	6000
8	Oil	5000
9	Water	12000
10	Grease	4000

SECTION - II

Q7) a) What are the aims of Safety programme and what it includes? **[6]**

b) Explain importance of site layout for any construction work? **[4]**

c) Draw a site layout for construction of bridge across the river. **[6]**

OR

Q8) a) What are the Personal protective equipments used on multistoried building Site? **[4]**

b) Define Injury frequency rate & injury severity rate and injury index. **[6]**

c) Draw a site layout of a project you have visited. **[6]**

Q9) a) Explain with sketch the Demand and supply curve. **[6]**

b) Explain with help of example 'law of diminishing marginal utility'. **[6]**

c) Explain the following terms with suitable examples **[6]**

   i) Law of Substitution

   ii) Elasticity of demand

OR

Q10) a) Define Cost, Price and Value with help of suitable example. **[6]**

b) Discuss the contribution of construction industry in growth of countries Economy. **[6]**

c) Explain in brief elasticity of Supply. **[6]**

Q11) Write a short note on any FOUR: **[16]**

    a)   Cash flow diagram.

    b)   Payback period

    c)   Annuity

    d)   ARR method

    e)   IRR method

<div align="center">OR</div>

Q12) a)   Write a short note on any TWO. **[8]**

       i)   Benefit cost ratio

      ii)   Break even analysis

     iii)   Types of Capital.

    b)   State the formula of NPV and B/C ratio method? Compare the project by both method and state its feasibility if project cost is Rs. 1,50,000 has net cash flow of Rs. 20,000 for a period 5 years. Firm expects returns at 10% per annum. **[8]**

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