Total No. of Questions : 9]

SEAT No. :

P2365

[Total No. of Pages : 4

[4758]-510

T.E. (Civil)

PROJECT MANAGEMENT AND ENGINEERING ECONOMICS

(2012 Pattern) (Semester - II) (End - Sem.) (301008)

Time : 2½ Hours] *[Max. Marks :70*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right side indicate full marks.***
3) ***Assume suitable data, if necessary.***

Q1) a) What are the different types of organizational structures? Explain scalar types of organizational structure. **[6]**

OR

b) List out rules of drawing network diagram & explain "Fulkerson's Rules" of numbering system. **[6]**

Q2) a) The following tables gives the time estimates of the various activity of a project. **[6]**

Activity	1 - 2	2 - 3	2 - 4	3 - 5	4 - 6	5 - 6	5 - 7	6 - 7
t_o	1	3	2	4	4	0	3	2
t_m	2	6	4	6	6	0	4	5
t_p	3	9	6	9	8	0	5	9

i) Draw project network & find out total duration.

ii) Calculate variance along critical path.

OR

P.T.O.

b) Calculate EST, EFT, LST, LFT, IDF & IF for following activities. Tabulate the result with sample calculation. **[6]**

Acitivity	1 - 2	1 - 3	2 - 4	3 - 4	4 - 5
Duration in 'Days'	2	3	4	5	6

Q3) a) What is updating of network? Write down procedure for updating. **[4]**

b) Write down different project management software used in construction Industries. Explain the advantage of using these software. **[4]**

OR

Q3) The Review of small construction project was taken after 12 days & following conditions exists. **[8]**

Conditions:

a) Activity - A, B, E have been completed.

b) Activity - D has been progress for "4" weeks & required "7" more weeks for completion.

c) Activity -F, has been in progress for "1" week & require "4" more weeks for completion.

d) Activity - G has been in progress for "1" week & require "7" more weeks for completion.

e) Activity -C has been in progress for "4" weeks & require "5" more weeks for completion.

f) It has been reassessed that activity - H, needs "6" weeks for completion.

Draw original network diagram & shows critical path of following.

Event	1 - 2	1 - 3	2 - 5	2 - 4	3 - 4	4 - 5	4 - 6	5 - 6
Activity	A	B	C	D	E	F	G	H
Duration (weeks)	6	4	7	9	5	6	7	4

& after taking all conditions update your network diagram & shows all critical path.

Q4) a) Explain roll of construction industry in economical growth of any country. **[4]**

b) What are the factors influencing on demand & supply. Explain each in brief. **[6]**

c) Define "Annuity" with the help of example. State formula to find out sinking fund annuity. A financial Institution introduces a plan to pay a sum of Rs. 15 lakhs after 10 years at the rate of 18% compounded annually. Find the annual equivalent amount that person should invest at the end of every year for the next 10 years to receive 15 lakhs after 10 years from the institutions. **[6]**

OR

Q5) a) Explain law of diminishing marginal utility with help of suitable example. **[4]**

b) Explain demand & supply curve with neat diagram. **[6]**

c) What are the kinds of annuities? State the formula of capital recovery annuity.

Mayuresh developer taken a loan from a bank Rs. 40 lakhs at an interest of 15% rate compounded annually. This amount should be repaid 10 years in equal installments. Find monthly installment that Mayuresh developer has to pay to bank. **[6]**

Q6) a) Write a note on "ABC" analysis & how to conduct "ABC" analysis. **[6]**

b) Determine expression for "EOQ". **[8]**

The rate of use of a particular raw material from stores is 1000 unit/year. The cost of placing a receiving order is Rs. 50/-. The cost of each unit is Rs. 100/-. The cost of carrying inventory in percent per year is 0.20, depends on average store.

Determine

i) EOQ

ii) Calculate order point when lend time is 6 months

c) Write down safety programme for construction of Highway project. **[4]**

OR

Q7) a) What are the functions of material management Department. **[6]**

b) Perform "ABC" analysis for following data. **[8]**

Sr. No.	1	2	3	4	5	6
Items	Cement	Bricks	Nails	Dry Distemper	Oil	Tiles
Amount Expenditure (Rs.)	4,90,000	95,000	3,000	12,000	10,000	30,000

Draw the curve also.

c) Define the terms IRR, ISR, injury index & disablement. **[4]**

Q8) a) What are the appraisal essential before understanding of any project? Explain any three brief. **[6]**

b) What are the methods of capital budgeting cost of project "A" is Rs. 60000/- it has a cash inflow of Rs. 20,000/- for a period of 4 years. What is the "NPV" if the firm expects 12% of annum? **[6]**

c) Explain pay back period method with the help of suitable example. **[4]**

OR

Q9) a) Explain with neat sketch "Break even analysis". **[4]**

b) Write a short note on "concept of benefit cost analysis. **[4]**

c) Surya associates has following details. **[8]**

i) Fixed cost = Rs. 30 lakhs

ii) Variable cost per unit = Rs. 150

iii) Selling price per unit = Rs. 300

Find 1) Break even quantity.

2) Break even sale.

3) Actual production quantity is 80,000 find out contribution.

EEE