

Total No. of Questions : 12]

SEAT No. :

P2014

[Total No. of Pages : 4

[4858] - 110

T.E. (Civil) (Semester - II)

**PROJECT MANAGEMENT AND ENGINEERING ECONOMICS**  
**(2008 Pattern)**

*Time : 3 Hours]*

*[Max. Marks : 100*

*Instructions to the candidates:*

- 1) *Answer any three questions from each section.*
- 2) *Answers to the two sections should be written in separate answer books.*

**SECTION - I**

- Q1)** a) What are the functions of management? [4]  
b) Differentiate between CPM and PERT. [4]  
c) Draw network diag. Mark critical path and calculate project duration, total float for the data as follows: [10]

Activity →	1-2	1-3	1-4	2-5	3-4	3-5	4-5	5-6
Duration (Days) →	2	6	4	8	Dummy	6	3	5

OR

- Q2)** a) Explain Gantt chart and state its limitations. [4]  
b) Define an Activity, event diagrammatically with help of suitable example.[4]  
c) Construct the project network and find critical path with expected project completion time. [10]

Activity →	A	B	C	D	E	F	G
Immediate Predecessor →	-	-	-	A	A,B	C	D,E,F
Duration (weeks) (to,tm,tp)	6,7,8	1,2,9	1,4,7	1,2,3	1,2,9	1,5,9	4,4,4

**P.T.O.**

**Q3) a)** What do you understand by resource smoothing and resource levelling? [6]

b) From the given data Draw EST squared network and histogram diag. for EST solution. [10]

Activity →	1-2	2-3	2-4	3-5	4-5
Duration (Days) →	5	7	9	5	4
Men/day →	10	2	6	5	4

OR

**Q4) a)** Define updating of network diag. & explain the conditions under which updating is carried out. [6]

b) Following data pertains to a small construction work. [10]

Activity →	1-2	1-3	2-3	2-4	3-4	3-5	4-6	5-6	6-7
Duration (Days) →	3	2	4	7	6	7	3	9	7

i) Draw a network, calculate project duration and mark critical path.

ii) At the end of 13 days, review was taken which indicates activities 1-2, 1-3, 2-3, 2-4, 3-4 completed as per originally planned and no other activities are started yet. Draw updated network, calculate project duration and show critical path. How much is the change in project duration?

**Q5) a)** List out the functions of material manager any six. [6]

b) As a site engineer what care should you take about material procurement & resources before casting of concrete slab? [5]

c) Explain the step by step procedure to segregate material by their annual usage. [5]

OR

- Q6)** a) If you are the head of store dept. How can you purchase and store the material? [6]
- b) Define E.O.Q. and derive expression for it. [5]
- c) Define inventory. Explain the costs associated with inventory problems with sketch. [5]

**SECTION - II**

- Q7)** a) What are the causes of accidents on construction site? [6]
- b) Define with help of formulae I.F.R. I.S.R. and injury index. [6]
- c) What are the guidelines to prepare safety programme related to construction? [6]

OR

- Q8)** a) What are the various causes of accidents that may take place during tunneling operation? How it can be avoided? [6]
- b) Elaborate importance of engineering, education, enforcement in safety programme. [6]
- c) Define site layout. What are the factors affecting on a site layout? [6]
- Q9)** a) Explain importance of economy in construction industry with help of pie chart. [6]
- b) Explain law of diminishing marginal utility with help of suitable example. [5]
- c) Describe law of Demand and supply with help of diagram. [5]

OR

**Q10)a)** Define engineering economics and explain the importance of it in civil engg. [6]

b) Give definitions of the following; Cost, Price, Value, Goods, Wants. [5]

c) 'Niwant tailor Mayani' produces 1000 shirts and sells them at Rs. 300/- each. The variable cost Rs. 50/- and fixed cost Rs. 2 lakh. Calculate Breakeven quantity and breakeven sales. [5]

**Q11)a)** What are the steps involved in preparing feasibility study report of a construction project? [6]

b) Define the following terms simple interest, compound interest profit, gross profit, net profit. [5]

c) Explain cashflow diag. and state the formula to find out future sum (F) after 'n' years from a single investment (P) when rate of interest (i). [5]

OR

**Q12)a)** Define Annuity explain sinking fund annuity with the help of example. [6]

b) Write a short note on any two : [10]

i) NPV method with example.

ii) Benefit cost ratio method with example.

iii) Pay back period method with example.

