

Seat No.	
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T.E. (Civil Engg.) (Part - II) (Semester - VI) Examination, May - 2014
ENGINEERING MANAGEMENT (New) (Revised)
Sub. Code : 45544

Day and Date : Wednesday, 21 - 05 - 2014

Total Marks : 100

Time : 2.30 p.m. to 5.30 p.m.

- Instructions : 1) Q.1 and Q.6 are compulsory.
 2) Out of remaining attempt any two questions from each section.
 3) Figures to the right indicates full marks.

SECTION - I

- Q1) a) What are the functions of management? Explain in brief the controlling function. [5]
 b) What is Resource levelling? What is its significance? [5]
 c) Draw the network, determine critical path and find out project duration, total float and free float by using following data : [10]

Activity	1-2	2-3	2-4	3-4	3-5	4-6	5-6
Dur.(weeks)	14	13	16	15	17	19	12

- Q2) a) Explain in brief the steps to solve Linear Programming Problem by simplex Method. [5]
 b) Describe in brief the various phases in Project management. [10]
- Q3) a) Describe in brief the process of Decision making. [5]
 b) Carry out network compression stage by stage for the following project. Determine the least cost and optimum duration. Assume indirect cost as Rs. 150 per week. [10]

Activity	Normal Duration (weeks)	Crash Duration (weeks)	Normal Cost (Rs.)	Crash Cost (Rs.)
1-2	5	3	500	1300
2-3	6	3	400	850
2-4	8	6	460	700
3-4	5	3	600	1100

- Q4) a) Explain step by step how will you determine the probability of completing certain Project in scheduled time by using PERT network? [7]
- b) Get the IBFS in the following transportation problem by Least Cost Method. Also state the corresponding transportation cost. [8]

	D ₁	D ₂	D ₃	D ₄	Supply
					↓
S ₁	10	15	20	14	30
S ₂	5	7	6	8	20
S ₃	4	9	10	13	15
Demand →	10	15	20	20	

- Q5) Write short notes on any three : [15]
- Milestone Chart.
 - Network updating.
 - Work Study.
 - Types of organizations.
 - Precedence Network.

SECTION - II

- Q6) a) What is engineering economics? [4]
- b) Given interest rate of 5% per year what sum will be accumulated after 6 years if Rs. 200/- invested at the end of each year for 6 years. [4]
- c) Determine capitalized cost of project that has initial cost of Rs. 9,00,000/- & an additional investment of Rs. 1,50,000/- after 10 years. The annual operation & maintenance cost of Rs. 15,000/- for first four years & Rs. 18,000/- for next years. The repair cost of Rs. 55,000/- is incurred after every 13 years. Assume $i = 12\%$ per year. [12]
- Q7) a) Explain how will you use following methods for economic comparison. [8]
- Benefit-cost ratio method.
 - Payback method.
- b) Define the following terms with neat sketch with reference to Break-even analysis : [7]
- Fixed cost
 - Variable cost
 - Total sales/Revenue
 - Total cost
 - Break-even point

- Q8) a) Which factors will you consider while deciding the site layout of a typical construction site? Draw a typical site layout of large industrial shed? [8]
b) Describe the main provisions of Child Labour Act. [7]
- Q9) a) State the objectives of Material Management. [3]
b) A construction company consumes 12,000 cement bags every year for its construction activities. It requires Rs. 250/- to place order. Each bag costs Rs. 200/-. If inventory carrying cost is 12% of average inventory investment, find out EOQ. How many times the order be placed in a year? [6]
c) Explain the general structure of a Queing system. [6]
- Q10) Write short notes on any three : [15]
a) Re-order level.
b) Workmen's Compensation Act.
c) Time Value Money.
d) ABC analysis.

