

BE Semester-VIII(Civil) Question Bank

CE802: Construction Management and Economics

All questions carry equal marks(10 marks)

Q.1	Define construction and construction management				
Q.2	Explain bar charts with simple illustration				
Q.3	Explain Gantt Bar chart				
Q.4	Explain method of assigning duration to construction activity.				
Q.5	Distinguish between PERT & CPM				
Q.6	Define and explain (1) pessimistic time (2) Optimistic time (3) Most Probable time.				
Q.7	Define following terms 1. Crash cost 2. Crash duration 3. Indirect cost 4. Direct cost				
Q.8	For the network having following details determine optimum duration and corresponding minimum cost				
	activity	Normal cost Ra	Normal duration	Crash cost	Ccrash duration
	1-2	4500	4	6500	2
	1-3	7000	6	10000	4
	1-4	5000	5	7000	4
	4-5	8000	8	9500	5
	2-5	7000	5	7800	3
	3-5	4000	4	5000	2
Indirect cost = Rs. 2500 / week					
Q.9	Describe financial aspects related to construction equipments				
Q.10	State advantages and disadvantages of hiring construction equipments				
Q.11	What is meant by depreciation. List the methods to find depreciation and explain any one.				
Q.12	An equipment that was purchased at a cost of Rs 20 lakhs, six years age is considered for replacement. The existing equipment can be sold at a price of Rs. 5 lakhs and if kept for another six years will have salvage value of Rs. 1 lakh. The challenger has annual operating cost of Rs. 50000/- and its salvage value is rs. 5 lakhs at the end of 12 years. Rate of interest is 10%. Decide whether to continue services of existing equipment or replace it.				
Q.13	Explain the term "job layout" and draw a job layout for a construction site of a large multi-storeyed building.				
Q.14	Discuss importance of safety in construction site. Describe some common causes of accidents.				
Q.15	Explain cash flow diagram and its importance with simple example.				
Q.16	Explain the term updating. Why updating is necessary?				
Q.17	Explain various types of organisation.				
Q.18	Explain in detail resources smoothing method of resources allocation problem.				

Q.19	Explain the necessity of labour legislation. Explain any two labour laws.																																	
Q.20	Define management. Explain functions and principles of management.																																	
Q.21	Identify and enlist the materials required for construction of 10 storied apartment building. How you will manage the materials at construction site																																	
Q.22	Classify the equipments required in construction industry.																																	
Q.23	Discuss objectives of construction management and Explain Planning, Scheduling and Controlling as a Function of Construction Management.																																	
Q.24	Explain the importance of equipments in construction industry and Discuss aspects of construction equipments that are required to be studied and mastered in order to accomplish cost effective and timely completion of construction projects.																																	
Q.25	State Rules for drawing network. Explain with suitable examples, errors in AOA networks																																	
Q.26	<p>A small project consists of twelve activities. Interrelationships amongst various activities are as follows:</p> <ul style="list-style-type: none"> • Activity A is starting activity and proceeds activities B,C and D. • Activity E depends on activities B and C • Activity F follows activities C and D. • Activities G and H can start as soon as activity D is completed. • Activity I succeeds activities G, E and F. • Activities J and K can start only when activities H and I are completed. • Activity L is the last activity and it succeeds activities J and K. • Prepare dependency table and draw AOA diagram. 																																	
Q.27	Explain the concept of time value of money.																																	
Q.28	<p>Compare two alternative available for using equipment on construction project site for project duration of 8 (eight) years.</p> <p>Alternative A : Buy new equipment at first cost of Rs. 50,00,000/-with net annual return of Rs. 09,00,000/- and salvage value of @ 10 % of its first cost.</p> <p>Alternative B : Buy second hand equipment at cost of Rs. 30,00,000/- with net annual return of Rs. 6,00,000/- and useful life of 4 (four) year with 0 (zero) salvage value.</p> <p>Additional Information: At present market value of 4 (four) year old new equipment is @ 34,00,000/- and M.A.R.R. = 18 %</p>																																	
Q.29	Explain, Why time cost trade off is necessary? Discuss various ways to reduce the activity duration.																																	
Q.30	<p>For a small project following data is available.</p> <table border="1" data-bbox="331 1906 1193 2020"> <tr> <td>I node for</td> <td>1</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>4</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> </tr> <tr> <td>J node for</td> <td>2</td> <td>3</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>7</td> <td>7</td> <td>8</td> </tr> <tr> <td>Normal</td> <td>10</td> <td>13</td> <td>4</td> <td>6</td> <td>0</td> <td>5</td> <td>9</td> <td>7</td> <td>3</td> <td>3</td> </tr> </table>	I node for	1	1	2	3	4	4	4	5	6	7	J node for	2	3	3	4	5	6	7	7	7	8	Normal	10	13	4	6	0	5	9	7	3	3
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	<p>Take indirect cost as Rs.50 per day. Determine</p> <p>(a) Normal Project duration and corresponding project cost.</p> <p>(b) Optimum Project cost and corresponding project duration.</p> <p>(c) Minimum project duration and corresponding project cost.</p>																																	
Q.31	<p>Estimate book value of equipment at the end of each year of ownership</p> <p>Data:</p> <ul style="list-style-type: none"> • Initial book value of equipment = Rs. 25,00,000/- • period of ownership = five years. • Salvage value = Rs. 2,00,000/- • method of depreciation = sinking fund method take $i = 5\%$ 																																	
Q.32	<p>What are the objectives of resource allocation? Explain do you mean by resource levelling? Explain step by step process for resource levelling.</p>																																	
Q.33	<p>Discuss various costs parameters that are considered and analyzed in order to formulate equipment replacement policy.</p>																																	
Q.34	<p>For a civil engineering project net volume of earth fill is 2,50,000 m³ (with moisture content of 16 % and dry unit weight of 1980 kg / m³). This is to be done by excavating stiff clay borrow pit having 18 % moisture content and unit weight of undisturbed soil sample of 2100 kg / m³ . Estimate total volume of borrow pit excavation and volume of water that will either required to be added or to be expelled in order to achieve design specifications.</p>																																	
Q.35	<p>Differentiate between network diagram and time grid diagram. Discuss with suitable examples, use of time grid diagram to prepare resource schedule.</p>																																	
Q.36	<p>Explain meaning of cash flow analysis. Discuss purpose of cash flow analysis. Also differentiate between cash flow for contractor and cash flow for owner.</p>																																	
Q.37	<p>Describe safety requirements for demolition works, and safety measures to be adopted for Excavation.</p>																																	
Q.38	<p>Building construction projects and infrastructure projects.</p> <ul style="list-style-type: none"> • Heavy construction works and industrial construction works • Building construction works and Industrial construction works • bar chart and Mile stone chart • Optimistic time and pessimistic time • Total float and free float • Critical path and near critical path with reference to PERT 																																	

Q.39	<p>From following information determine the cost of production (excavation and hauling) in terms of Rupees per Cubic meter.</p> <ul style="list-style-type: none"> • Excavating equipment : Hoe with 1.33 m³ dipper (can handle 1.51 m³) having cycle time of 16 seconds and operating factor of 55 minute per hour . Cost Rs. 3500 per hour) • Material : good common earth with swell of 20 % and fill factor of 0.85. • Hauling Units : Trucks 8.5 m³ (b.m.) capacity with operating factor of 50 minutes per hour and having round trip time 22 minutes. (Cost Rs. 400 per hour.)
Q.40	<p>For construction equipment following information is available.</p> <ul style="list-style-type: none"> • Initial cost of acquisition Rs. 65,00,000/- • Cost of tyre sets Rs. 3,50,000/- to be replaced after every 3000 hours of operation. • Cost of major overhaul and repairs Rs. 8,00,000/- to be carried out after every 4500 hours of operation. • Cost of fuel, lubricants and minor repairs and maintenance Rs. 1100/- per hour • Estimated Life of machine = 13500 Hours of operation. • Estimated salvage value = 15 % of initial cost. • Estimated usage of equipment = 1500 Hours per year <p>If MARR is 20 % per year estimate minimum hourly rental charges for equipment.</p>