

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BTECH
BRANCH: CIVIL

SEMESTER : IV
SESSION : SP/2024

SUBJECT: CE209 CONSTRUCTION ENGINEERING AND MANAGEMENT

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Discuss the role of a project coordinator in successful completion of a project.	[5]	1 II
Q.1(b)	What are the different forms of business organization? Discuss briefly.	[5]	1 I
Q.2(a)	There are two alternatives for purchasing a concrete mixer. Both the alternatives have same useful life. The cash flow details of alternatives are as follows; Alternative-1: Initial purchase cost = Rs.300000, Annual operating and maintenance cost = Rs.20000, Expected salvage value = Rs.125000, Useful life = 5 years. Alternative-2: Initial purchase cost = Rs.200000, Annual operating and maintenance cost = Rs.35000, Expected salvage value = Rs.70000, Useful life = 5 years. Using future worth method, find out which alternative should be selected, if the rate of interest is 10% per year.	[5]	1 V
Q.2(b)	A material supply contractor has two options (i.e. from two different manufacturing companies, Company-1 and Company-2) to purchase a tractor for supply of construction materials. The details of cash flow of the two options are given below; Company-1 Tractor: Initial purchase cost = Rs.2000000, Annual operating cost including labor and maintenance = Rs.50000, Cost of new set of tires to be replaced at the end of year „3“, year „6“ and year „9“ = Rs.110000 each, Expected salvage value = Rs.520000, Useful life = 10 years. Company-2 Tractor: Initial purchase cost = Rs.2200000, Annual operating cost including labor and maintenance = Rs.27000, Cost of new set of tires to be replaced at the end of year „4“ and year „8“ = Rs.120000 each, Expected salvage value = Rs.700000, Useful life = 10 years. Determine which company tractor should be selected on the basis of equivalent uniform annual worth at the interest rate of 12% per year.	[5]	2 V
Q.3(a)	A project consists of eight activities M, N, O, P, Q, R, S, T. Draw the network and number the events if: (i) Activities M, N, and Q can start concurrently. (ii) Activities O and P are concurrent, and depend on the completion of both M and N. (iii) Activities R and S are concurrent and depend on the completion of O. (iv) Activity T depends upon the completion of P, Q and R. (v) The project is complete when S and T are done.	[5]	3 V
Q.3(b)	Define (i) Slack, (ii) Float. What are the importance of these parameters in project management ?	[5]	3 II
Q.4(a)	What are the constituents parts of a contract document ? Briefly discuss.	[5]	4 I
Q.4(b)	Discuss the importance of quality control and quality management in a project ?	[5]	4 I
Q.5(a)	What are the functions/ importance of Project Management Information System (PMIS)?	[5]	5 II
Q.5(b)	What are the importance of information in project context ?	[5]	5 II

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