

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

**CLASS: B.TECH.  
BRANCH: CIVIL**

**SEMESTER : IV  
SESSION : SP/2023**

**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)	What are the phases of a construction project? Write the important traits of a project coordinator.	[5] 1	I
Q.1(b)	Who are the stakeholders of a construction project? Mention the ethical conduct for engineers.	[5] 1	I
Q.2(a)	What is Cash flow diagram? Compare between Present worth and Future worth concepts.	[5] 2	II
Q.2(b)	A material testing laboratory has two alternatives for purchasing a compression testing machine which will be used for determining the compressive strength of different construction materials. The alternatives are from two different manufacturing companies. The cash flow details of the alternatives are as follows; Alternative-1: Initial purchase price = Rs.1000000, Annual operating cost = Rs.10000, Expected annual income to be generated from testing of different construction materials = Rs.175000, Expected salvage value = Rs.200000, Useful life = 10 years. Alternative-2: Initial purchase price = Rs.700000, Annual operating cost = Rs.15000, Expected annual income to be generated from testing of different construction materials = Rs.165000, Expected salvage value = Rs.250000, Useful life = 5 years. Using present worth method, find out the most economical alternative at the interest rate of 10% per year.	[5] 2	V
Q.3(a)	Define Event and Activity. Briefly discuss Fulkerson's rule.	[5] 3	I
Q.3(b)	Provide two examples of Dummy activity drawing and explain two different networks.	[5] 3	III
Q.4(a)	What do you mean by Bill of quantities? Briefly discuss the classification of contracts.	[5] 4	I
Q.4(b)	Briefly discuss the methodology and components of Quality control and assuring quality in a project.	[5] 4	VI
Q.5(a)	Mention the importance of information in the context of a project. What do you mean by Project management information system?	[5] 5	I
Q.5(b)	Write a short note on project document management. Mention any two factors affecting project management information system.	[5] 5	II

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