

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

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

**SEMESTER: IV
SESSION : SP/2020**

SUBJECT: CE209 CONSTRUCTION ENGINEERING AND MANAGEMENT

TIME: 2 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 25.
2. Candidates may attempt for all 25 marks.
3. Before attempting the question paper, be sure that you have got the correct question paper.
4. The missing data, if any, may be assumed suitably.

			CO	BL
Q1	(a) What are the important traits of a project coordinator?	[2]	1	I
Q1	(b) What are the phases of a construction project? Discuss in detail.	[3]	1	I
Q2	(a) Discuss briefly the ethical conducts to be followed by engineers.	[2]	1	VI
Q2	(b) What are the different forms of business organization? Discuss briefly.	[3]	1	VI
Q3	(a) What do you mean by Cash-flow diagram? Mention its uses.	[2]	2	I
Q3	(b) Explain the rate of return method briefly.	[3]	2	V
Q4	A construction contractor has three options to purchase a dump truck for transportation and dumping of soil at a construction site. All the alternatives have the same useful life. The cash flow details of all the alternatives are provided as follows; Option-1: Initial purchase price = Rs.2500000, Annual operating cost Rs.45000 at the end of 1st year and increasing by Rs.3000 in the subsequent years till the end of useful life, Annual income = Rs.120000, Salvage value = Rs.550000, Useful life = 10 years. Option-2: Initial purchase price = Rs.3000000, Annual operating cost = Rs.30000, Annual income Rs.150000 for first three years and increasing by Rs.5000 in the subsequent years till the end of useful life, Salvage value = Rs.800000, Useful life = 10 years. Option-3: Initial purchase price = Rs.2700000, Annual operating cost Rs.35000 for first 5 years and increasing by Rs.2000 in the successive years till the end of useful life, Annual income = Rs.140000, Expected salvage value = Rs.650000, Useful life = 10 years. Using present worth method, find out which alternative should be selected, if the rate of interest is 8% per year.	[5]	2	V
Q5	A construction project consists of 12 activities. The activities are identified by their node numbers as indicated below:	[5]	3	V

Activity	Node Numbers	Activity	Node Numbers
A	(1, 2)	G	(4, 6)
B	(2, 4)	H	(5, 6)
C	(2, 3)	I	(5, 7)
D	(2, 7)	J	(7, 8)
E	(3, 4)	K	(6, 8)
F	(3, 5)	L	(8, 9)

Draw the network diagram.

: : : : : 03/03/2020 : : : : : E