

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

CLASS: BTECH/BHMCT
BRANCH: ALL

SEMESTER : V/VII/ADD
SESSION : MO/2025

SUBJECT: PE309 PROJECT 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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| Q.1(a) Classify the different types of projects with suitable examples. | [5] | 1 2 |
| Q.1(b) Explain the various stages of the project life cycle. | [5] | 1 3 |

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| Q.2(a) Discuss the key elements of Organization Structure. | [5] | 2 2 |
| Q.2(b) Explain the various factors to be considered in Project Appraisal. | [5] | 2 3 |

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| Q.3(a) Enumerate the Importance of Environmental consideration in project evaluation. | [5] | 3 2 |
| Q.3(b) Explain the social cost-benefit aspects of the projects. | [5] | 3 3 |

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| Q.4(a) Define Activity-on-node (AON) network diagram? And draw the AON diagram for the following data: | [5] | 4 2 |
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Activity	A	B	C	D	E	F	G
Immediate Predecessors	----	A	A	B	B,C	C	D,E,F
Duration(weeks)	5	4	7	6	6	5	7

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| Q.4(b) Determine the critical path for the activity given below: | [5] | 4 3 |
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Activity	0-1	1-2	1-3	2-4	2-5	3-4	3-6	4-7	5-7	6-7
Duration (days)	2	8	10	6	3	3	7	5	2	8

Calculate: EST,LST.EFT,LFT and Total Float for each activity.

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| Q.5(a) Differentiate between PERT and CPM? And draw a network to represent the project based on given data: | [5] | 5 2 |
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Tasks A, B, C,.....,H,I constitute a project. The precedence relationships are A<D; A<E; B<F; D<F; C<G; C<H; F<I; G<I.

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| Q.5(b) Project schedule has the following Characteristics: | [5] | 5 3 |
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Activity	1-2	1-3	1-4	2-5	3-5	4-6	5-6
t_o	1	1	2	1	2	2	3
t_m	1	4	2	1	5	5	6
t_p	7	7	8	1	14	8	15

- (a) Construct the project network.
- (b) Find expected duration and variance for each activity.
- (c) Find the critical path and expected project length.