

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI**  
(END SEMESTER EXAMINATION SP-2023)

CLASS: B.TECH  
BRANCH: PIE

SEMESTER : IV  
SESSION : SP/2023

**SUBJECT: PE219- PROJECT ENGINEERING**

TIME: 03 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. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates

- Q.1(a) What are the causes of the delay of the projects? How you can eliminate them? [5]  
 Q.1(b) What do you mean by project life cycle? Explain the various stages of project cycle. [5]
- Q.2(a) Explain the guidelines for preparation of project proposals. [5]  
 Q.2(b) Write the assumptions & limitations in break-even analysis. [5]
- Q.3(a) Explain the factors affecting the selection of project location/project site. [5]  
 Q.3(b) What do you mean by social costs? What are the main features of social cost-benefit analysis? [5]
- Q.4(a) Explain the rules for network drawing and numbering the events. [5]  
 Q.4(b) Draw the activity-on-node (AON) project network associated with the following activities for Dave Carhart's consulting company project and find the critical path. [5]

Activity	Immediate Predecessor(s)	Time (Days)
A	–	3
B	A	4
C	A	6
D	B	6
E	B	4
F	C	4
G	D	6
H	E, F	8

- Q.5(a) What is the difference between PERT and CPM? [5]  
 Q.5(b) The PERT time estimates of the project are given. Construct the PERT network, find the critical path and variance of each event. [5]

Activity	Optimistic time	Pessimistic time	Most expected time
1-2	1	5	1.5
2-3	1	3	2
2-4	1	5	3
3-5	3	5	4
4-5	2	4	3
4-6	3	7	5
5-7	4	6	5
6-7	6	8	7
7-8	2	6	4
7-9	5	8	6
8-10	1	3	2
9-10	3	7	3