



Question 1 (17 Grades)

The construction plan of a two-span R.C. bridge is given in the table below:

Code	Activity	Duration (days)	Predecessors
A	Set up site	3	
B	Excavate left abutment	6	
C	Excavate right abutment	6	
D	Excavate central pier	9	
E	Foundation left abutment	8	
F	Foundation right abutment	8	
G	Foundation central pier	10	
H	Construct left abutment	8	
I	Construct right abutment	8	
J	Construct central pier	10	
K	Erect left precast beams	1	
L	Erect right precast beams	1	
M	Construct deck slab	2	
N	Clear site	3	

Consider limited resources, it is required to:

- Suggest a simple work breakdown structure for the project.
- Tabulate the predecessors of each activity.
- Produce the schedule of the project showing the critical path.

Question 2 (17 Grades)

The table below gives the activities involved in a pipeline project. If the maximum number of cranes available is only one and number of labors available is 12 labors, determine the scheduled timings of the activities so that the resources needed at any time period do not exceed the maximum limits.

Code	Activity	Predecessors	Duration (days)	Resources	
				Crane	Labors
A	Move on to site	-	4	-	-
B	Obtain pipes	A	6	1	5
C	Obtain valves	A	12	-	5
D	Locate pipes	A	4	1	4
E	Excavate trench	D	12	-	7
F	Valve chambers	C,E	10	-	4
G	Joint pipes	B,E	8	1	4
H	Concrete anchors	G	4	-	3
I	Test pipeline	F,H	3	-	5
J	Backfill	I	3	-	-
K	Clean up site	J	2	-	-

Question 3 (16 Grades)

1. The documents of construction contract are,
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2. What are the characteristics of Cost plus Contracts?

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3. The owner has the ability to know the contractor profit in the
..... contracts.

4. Draw a typical organizational chart for a Fast-Track method.

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5. What are the weaknesses of the Traditional Delivery Method?

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6. In developing the WBS for a project, level of details depends on:
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