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Total Number of Pages: 03

M.ARCH
PEHD5203

4th Semester Regular Examination 2016-17

PROJECT MANAGEMENT

BRANCH: HABITAT

Time: 3 Hours

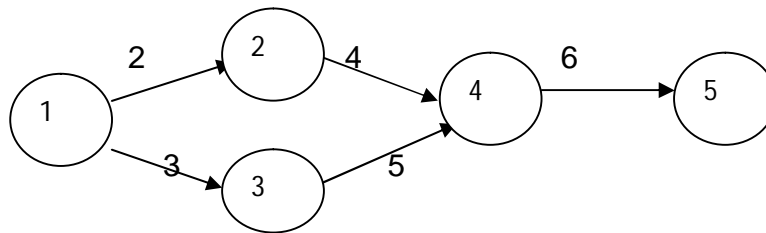
Max Marks: 70

Q.CODE: Z1135

**Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.**

- Q1** **Answer the following questions:** **(2 x 10)**
- a) AOA network
 - b) Total Float
 - c) Dummy Activity
 - d) Backward pass
 - e) Payback Period
 - f) Scheduled completion time
 - g) GANTT Chart
 - h) Levelling
 - i) Give formula for the average (mean) expected time.in PERT
 - j) Turnkey Project
- Q2** **a) Classify the following project elements into Activities and Events:** **(3)**
Earthwork started, Digging Foundations, laying of concrete, foundations completed, lay floor, columns erected, prepare budget, electric cabling started, Laying sewer,
- b) The following are the activities and logic for a project. Develop the network for the project. Apply the Fulkerson's Rule for numbering the events.** **(7)**
Activities – A,B, E, Q, K, X, J Z, G, F, C
Logic –
1. A and B represent the beginning of the job. They can be carried out at the same time.
 2. K follows E
 3. X depends on Q and K
 4. Neither F nor G can be started before B is completed, but they can be concurrently performed.
 5. E and Q follow A
 6. Q must be carried out before J
 7. C depends on the completion of F and G
 8. E and Q can be executed at the same time
 9. Z can only be started when C, X and J are finished
 10. Z is the last activity.

- Q3** Calculate the earliest and latest start and finish times, total, free and independent floats and the critical path of all activities of this network in a tabular form **(10)**



- Q4 a)** McRealty Limited, a Delhi based real estate firm wishes to enter the Real Estate Market of Odisha as a Developer. Analyse the profit potential of the real estate industry vis a vis the Porter's Model of Competitive strategy using the five basic competitive forces. Suggest whether McRealty Ltd should enter the market or not. **(5)**
- b)** Define the Life Cycle approach and give the various life cycle stages of an Industry. What is the best phase to enter an industry in your opinion? Give reasons why. What are the drawbacks of this phase? **(5)**
- Q5 a)** Simple WACC (Weighted Average Cost of Capital) formula **(5)**
- $$WACC = W_e \cdot K_e + W_d \cdot K_d (1 - T)$$
- Where W_e = wt of equity; W_d = Wt of debt, K_e = cost of equity; K_d = Cost of debt; T = Tax rate
- Weight of Equity for financing a new project of a company is 30%
- The Cost of Equity Capital is 20%
- The Cost of Debt is 9%
- Tax Rate is 30%
- The company will use only Equity and Debt finance its new project. Find the WACC for the same and state it in percentage terms.
- b)** Give the pros and cons and the decision rules for NPV **(5)**
- Q6 a)** Define the probabilistic time estimates for the PERT approach to estimating activity times, **(5)**

b) Activity Earliest and Latest Times and Slack**(5)**

Activity	t	σ^2	ES	EF	LS	LF	S
1-2	8	0.44	0	8	1	9	1
1-3	6	1.00	0	6	0	6	0
1-4	3	0.44	0	3	2	5	2
2-5	0	0.00	8	8	9	9	1
2-6	5	2.78	8	13	16	21	8
3-5	3	0.11	6	9	6	9	0
4-5	4	0.11	3	7	5	9	2
4-8	2	0.00	3	5	14	16	11
5-7	7	1.78	9	16	9	16	0
5-8	4	0.44	9	13	12	16	3
8-7	0	0.00	13	13	16	16	3
6-9	4	1.00	13	17	21	25	8
7-9	9	4.00	16	25	16	25	0

What is the critical path for the above network?

Give the total project variance.

Q7 a) Define direct cost, indirect cost of a project. Give the optimum cost vs Optimum time slope. **(5)**

b) How does the Cost Benefit Analysis for a Public sector differ from the CB analysis of the Private Sector. Give examples. **(5)**

Q8 Answer any two of the following (5 x 2)

- a)** Advantages and disadvantages of a Bar Chart.
- b)** Rules of network construction.
- c)** What are the components of project management?
- d)** Comparison between PERT and CPM