i) Draw the network & calculate the earliest start (ES), earliest finish (EF), Latest start (LS), Latest finish (LF) times of each of the activities.
ii) Find critical path. **8**

9. a) What are criteria for effective project control. **8**

b) What are objectives of MIS in project management. Discuss application of MIS. **6**

OR

10 a) Explain with sketch, three types of cybernetic control with specific use of each. **8**

b) What are objectives of project audit. What are difficulties in establishing audit purpose. **6**

11. a) How the feasibility report for the project is prepared ? **7**

b) What do you mean by project cost escalation ? What are reasons for it. **6**

OR

12. a) What do you mean by cost-time-value cycle ? How it is used for managing project resources flow ? **6**

b) What components should be considered while appraisal of project proposal ? **7**

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B. E. (Machanical Engineering)

Fifth Semester (CGS) Elective - I

Project Management

P. Pages : 4 **5 FEME 05**

Time : Three Hours Max. Marks : 80

Note : 1. Answer **three** questions from section A and **three** questions from section B.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.

SECTION - A

1. a) Discuss criterias to decide when to use project management technique. **5**

b) Describe internal constraints related with project management. **8**

OR

2. a) What are causes of project "over runs" ? How to avoid "over runs" to complete project without dealy. **6**

b) Enlist various numeric types 'project selection models' Describe any two. **7**

3. a) Describe pure matrix organisation structure. Discuss its merits & demerits. **7**

b) What are types of 'goal conflict ? How conflicts are resolved ? **6**

OR

4. a) Describe principle negotiation. Explain win-win solution. **6**

b) Explain workbreak down structures. Discuss with suitable example, how codification of task are useful for project planning. **7**

5. a) Explain life cycle phase with neat sketch. Describe task associated with each phase. **8**

b) Describe various combination of schedule variance & cost variance effecting performance measurement in EV analysis. **6**

OR

6. a) Explain earned value concept with neat sketch. Describe different terms used to measure overall performance of project. **9**

b) Describe bottom-up budgeting & top-down budgeting. **5**

SECTION - B

7. Various activities shown in table below with its duration & direct costs. The indirect cost is Rs.2000/- per week. Find the optimum project duration for minimum cost. **13**

Activity	Time in week		Cost in Rs.	
	Normal	Crash	Normal	Crash
1 – 2	8	4	3000	6
1 – 3	5	3	4000	8
2 – 4	9	6	4000	5500
3 – 5	7	5	2000	3200
2 – 5	5	1	8000	12000
4 – 6	3	2.5	10000	11200
5 – 6	6	2	4000	6800
6 – 7	10	7	6000	8700
5 – 7	9	5	4200	9000

OR

8. a) What is meant by dummy activities ? Explain with suitable example. **5**

b) Information on the activities required for a project is as follows.

Name	A	B	C	D	E	F	G	H	I	J	K
Activities Node	1 – 2	1 – 3	1 – 4	2 – 5	3 – 5	3 – 6	3 – 7	4 – 6	5 – 7	6 – 8	7 – 8
Duration	2	7	8	3	6	10	4	6	2	5	6