

B5.1-R4 : SOFTWARE PROJECT MANAGEMENT

NOTE :

1. Answer question 1 and any FOUR from questions 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Time: 3 Hours

Total Marks: 100

1.
 - (a) Explain project management triangle.
 - (b) Describe Payback Analysis in Software Projects.
 - (c) What is milestone in Project? How it is represented in MS Project?
 - (d) What is "Dangle" in network activity? Explain with an example.
 - (e) What is critical path and how does this affect a project schedule?
 - (f) Differentiate between Project Cost Plan & Project Budget.
 - (g) Explain Pareto Analysis technique. (7x4)

2.
 - (a) What is purpose of Software Project Management Plan? In which phase of Project it is prepared? Narrate content and format of Software Project Management Plan.
 - (b) Discuss the aspects, which need to be considered at the pre-feasibility and feasibility study of a project, what factors and issues need to be considered in financial, economical and technical evaluation?
 - (c) What is function point analysis and how is function point better as compared to LOC? Compute the Function Point value for a software project with the following details:
User Input: 15;
User Outputs: 25;
Number of Files:8;
Inquiries:12;
External Interfaces:03.
Assume the multipliers at their average values and all the complexity adjustment factors at their moderate values. (6+4+8)

3.
 - (a) What are different categories of Software development projects according to COCOMO estimation model? Give example of software product development projects belonging to each of these categories. How to find effort and time of development for each category?
 - (b) What is PERT/CPM? Explain the difference between critical path analysis and critical chain scheduling.
 - (c) What is the difference between SDLC and Software Project Management Life Cycle? Explain by taking an example. (6+4+8)

4.
 - (a) Explain the process of project planning in detail.
 - (b) What is Resource in Project Management? Which types of resources you can add in MS Project Resources sheet?
 - (c) What are metrics and measurement? Illustrate the type of product metrics. Narrate about the metrics or parameters to be considered for evaluating the software quality. (7+3+8)

5. (a) A software project involves execution of 5 tasks T1, T2, T3, T4 and T5 of duration 10, 15, 18, 30 and 40 days, respectively. T2 and T4 can start only after T1 completes. T3 can start after T2 completes. T5 can start only after both T3 and T4 complete.
- (i) What is the slack time of the task T3 in days?
- (ii) Draw the Gantt Chart and PERT charts for the project.
- (iii) Identify if any Critical Path exist in this project.
- (b) What is Cyclomatic Complexity? Determine the Cyclomatic Complexity of the sort function below:
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1 void sort(int a[],int n)
2 {
3 int i , j;
4 for(i=0;i<n-1;i++)
5 for(j=i+1;j<n;j++)
6 if(a[i]>a[j])
7 {
8 Temp=a[i];
9 a[i]=a[j];
10 a[j]=temp;
11 }
12 }
```
- (c) Explain the process of Delphi technique. Describe its advantages and disadvantages. (7+3+8)
6. (a) What are the objectives of project monitoring and control process and what is done during the project monitoring and control process?
- (b) Explain with example how Gantt chart is useful for project manager. (9+9)
7. (a) Write a short note on WBS? How it is useful for project manager? (9+9)
- (b) What is the role of software metrics in project management?

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