Sl. No.

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) Write the significance of Oldham-Hackman job characteristic model.

   (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) Difference between a Project Cost Plan and a Project Budget.

   (g) Explain Pareto Analysis technique. **(7x4)**

2. (a) What is purpose of SPMP Document ? In which phase of Project it is prepared ? Narrate content and format of SPMP.

   (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, economic and technical evaluation ?

   (c) What is function point analysis and how does function point is better when 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 CPM ? Explain with the help of an example 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 a example. **(6+4+8)**

4. (a) Explain process of project planning in detail with example.

(b) What is a Resource in Project Management ? Which are 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) Define Cyclomatic Complexity ? Determine the Cyclomatic Complexity of the sort function below.

```
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) What is Delphi Method in Project ? Explain Process of Delphi method in details. Explain its advantages and disadvantages in details. **(7+3+8)**

6. (a) What are the objectives of project monitoring and control process and what should be done during the project monitoring and control process ?

(b) Explain with example how Gantt chart and PERT chart are useful for project manager.

(9+9)

7. (a) What is Work Breakdown Structure (WBS) ? Explain WBS with example. How it is useful for project manager ?

(b) What is Software Metric Explain types of Metrics used in Software Project. What is the role of Software Metrics in Project Management ? **(9+9)**

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