Software Project Planning

1. What do you understand by software project planning? What are the various planning objectives? Also discuss various types of project plans with suitable example.

2. Write short notes on the following with suitable example:

    1. Software project estimation models

    2. Structure of a software project management plan.

3. Describe the following:

    1. Vision and scope document

    2. Management Spectrum

    3. SPM framework

    4. Decision Process

4. What you understand by work break structure (WBS)? What are the various types of WBS? What is the role of WBS directory and what the contents of it? Explain.

5. 1) What is the difference between the project life cycle and product life cycle? Discuss.

    2) Write a short note on organizational behaviour.

6. What do you mean by project scheduling? What are the scheduling objectives? How to build the project schedule?

7. What is the significance of project monitoring and control? What are the various dimensions of project monitoring and control? Does monitoring and control affect the project schedule? Discuss.

8. 1) what do you understand by schedule performances index (SPI)? Discuss.

    2) What do you mean by software review? What is the significance of software reviews in software project management?

9. Write short notes on the following with examples:

    1) Code Review

    2) Error Tracking

10. 1) what is software testing? What are software testing objectives? Discuss various types of testing in detail.

    2) Write a short note on testing automation and testing tools.

11. 1) what is the difference between testing principles and testing strategies? Discuss.

    2) What is the difference between program verification and program validation? Explain the life cycle verification approach with suitable diagram.

12. 1) Write a short note on SEI capability maturity model (CMM).

    2) Explain the term statistical quality assurance and clean room process.

13. What do you understand by software configuration management (SCM)? What are various software configuration items and tasks? Discuss with suitable example.

14. Describe the following with example:

1) Risk breakdown structure (RBS)

2) Cost benefits analysis.

15. What is the role of a software project management tool? Describe any software project management tool in detail.

16. Explain Software Project Planning, giving its various objectives. Also discuss the structure of a software project Management plan in detail.

17. 1) Explain why the intangibility of software system possess special problems for Software Project management?

2) Discuss the various responsibilities of a software project manager.

18. What do you mean by the software project estimation? Give various estimation models. Describe any one of the estimation model using suitable examples.

19. 1) What do you understand by the activity network and the Gantt chart? Draw the activity, network and Gantt chart representations for the following table that indicates the various tasks involved in completing a software project, the corresponding activities, and the estimated effort for each task in person-months:

Tasks	Activity	Efforts in person-months
T1	Requirements specification	1
T2	Design	2
T3	Code actuator interface module	2
T4	Code sensor interface module	5
T5	Code user interface part	3
T6	Code control processing part	1
T7	Integrate and test	6
T8	Write user manual	1

2) What is the difference between a macroscopic schedule and a detailed schedule? Is it possible to manage a project if only a microscopic schedule is developed? Discuss with suitable example.

3) Write short notes on the following:

a) WBS

b) CPM

20. What do you mean by earned value analysis and earned value indicators? Discuss various earned value indicators with examples.

21. Discuss error tracking with examples. Does it affect the SPM schedule? Explain.

22. Describe the difference between verification and validation. Do both make use of test case design methods and testing strategies?

23. 1) why is a highly coupled module difficult to unit test? Explain.

2) How can project scheduling affect integration testing? Discuss.

24. What is the difference between a software configuration management audit and a formal technical review? Can their functions be folded into one review? What are the pros and cons?

25. Differentiate between the following with example:

1) Known risks and predictable risks.

2) Change control and version control

26. Write short notes on the following:

1) CASE Tools

2) Risk Monitoring

27. Draw hierarchical organization of various project elements. Discuss each element in brief giving examples.

28 write down various components and their content in the vision and scope document of a project.

28. Planning is the most important activity in the overall Software Project Management. Comment on this statement.

29. What is cost benefit analysis? In context to cost benefit analysis, define the following term precisely.

- Net Profit (NP)
- Payback Period (PP)
- Return on Investment (ROI)
- Net Present Value (NPV)

30. The status of cash flow for four projects is given in the following table. (-ve figures at the end of year 0 represent initial investment).

Cash flow for four projects (figure are end of year totals in rupees)				
0	-100,000	-1,000,000	-100,000	-120,000
1	10,000	200,000	30,000	30,000
2	10,000	200,000	30,000	30,000
3	10,000	200,000	30,000	30,000
4	20,000	200,000	30,000	30,000
5	100,000	300,000	30,000	75,000

On the basis of data, calculate various terms (Q.29) above. You may assume discount rate to be as 10%.

31. 1) what is cash flow forecasting? Draw cash flow for a typical product life cycle.

2) Explain why discounted cash flow technique provides better criteria for project selection than net profit or return on investment.

32. List various methods of estimation. Discuss the alb retch function point count method for estimation of function points. Show that the complexity adjustment factor (CAF) adjusts the unadjusted value of function point(UFP) to +- 35%.

33. Discuss the COCOMO hierarchy of estimation models in details. How these model differ from the dynamic estimation models.

34. 1). Discuss SEI capability maturity model.

2). “software Quality Assurance is an umbrella activity” justify this statement.

35. Statistical quality assurance is done by carrying out a sequence of steps involving collection and classification of errors during all phases of development of the software and following Pareto’s principle. using this methodology derive expression for Error Index which acts as an indicator of the quality.

36. Consider the following information about a one year project.

1) Budgeted cost of work schedule (BCWS) = Rs. 23,000

2) Budgeted cost of work performed (BCWP) = Rs. 20,000

3) Actual cost of work performed (ACWP) = Rs. 25,000

4) Budget at completion (BAC) = Rs. 120000

Answer the following questions:

I) what is the cost variance, schedule variance, Cost Performance Index (CPI), and Schedule Performance Index (SPI) for the project?

II) How is the project doing? Is it ahead of schedule or behind the schedule? Is it under budget or over budget?

III) Use the CPI to calculate the estimate at completion (EAC) for this project. Is the project performing better or worse than planned??

IV) Use the schedule performance index to estimate how long it will take to finish the project.