# SRM VALLIAMMAI ENGINEERING COLLEGE

**(An Autonomous Institution)**

SRM Nagar, Kattankulathur – 603 203

## DEPARTMENT OF INFORMATION TECHNOLOGY

## (Common to Department of Computer Science Engineering)

## QUESTION BANK

**VII SEMESTER**

**1908702 SOFTWARE PROJECT MANAGEMENT**

**Regulation – 2019**

**Academic Year 2025 – 2026 (Odd Semester)**

*Prepared by*

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**SUBJECT : 1908702 SOFTWARE PROJECT MANAGEMENT**

**SEM/ YEAR : VII / IV**

| UNIT I - PROJECT EVALUATION AND PROJECT PLANNING | | | |
|---|---|---|---|
| Importance of Software Project Management –Activities Methodologies –Categorization of Software Projects –Setting objectives –Management Principles –Management Control –Project portfolio Management–Cost-benefit evaluation technology –Risk evaluation –Strategic program Management – Stepwise Project Planning. | | | |
| **PART-A** | | | |
| **Q. No.** | **Questions** | **BTL** | **Competence** |
| 1 | **Define** software project management. | BTL1 | Remembering |
| 2 | **Recall** project and process. | BTL1 | Remembering |
| 3 | **Outline** the characteristics of software project planning. | BTL2 | Understanding |
| 4 | **Which** factor decides the success of project**?** | BTL1 | Remembering |
| 5 | **List** the elements of product process. | BTL1 | Remembering |
| 6 | **Infer** the characteristics that makes software project different from another project. | BTL2 | Understanding |
| 7 | **Relate** contract management with technical project management. | BTL2 | Understanding |
| 8 | **Find** the characteristics of software projects. | BTL1 | Remembering |
| 9 | **Compare** program managers with project managers. | BTL2 | Understanding |
| 10 | **Illustrate** plans, methods and methodologies. | BTL2 | Understanding |
| 11 | **What** are the different stages in classic project life cycle? | BTL1 | Remembering |
| 12 | Do you agree that decision trees are helpful in risk handling? **Explain**. | BTL2 | Understanding |
| 13 | **Extract** the three successive processes that bring a new system. | BTL2 | Remembering |
| 14 | C**lassify** the software projects. | BTL2 | Understanding |
| 15 | **Name** the problems with software project from manager's point of view. | BTL1 | Remembering |
| 16 | **What** do you mean by the terms invisibility, complexity and complexity of software project management? | BTL1 | Remembering |
| 17 | **Infer** the things that are containing the product description. | BTL2 | Understanding |
| 18 | **Tell** the approaches of portfolio management. | BTL1 | Remembering |
| 19 | **Show** the hierarchical diagram of a sample PBS. | BTL2 | Understanding |
| 20 | **When** net present value is calculated for a project? | BTL1 | Remembering |
| 21 | **Find** the need for risk evaluation. | BTL1 | Remembering |
| 22 | **Summarize** the problems with software projects. | BTL2 | Understanding |
| 23 | **List** the steps to identify project scope and objectives. | BTL1 | Remembering |
| 24 | **Demonstrate** the impact of ROI for the software project development scenario that has net profit as $60,000 for 3 years where the total investment is $100,000. | BTL2 | Understanding |

| PART B | | | | |
|---|---|---|---|---|
| **Q. No.** | **Questions** | | **BTL** | **Competence** |
| 1 | (i) **List** the phases of software project management. Illustrate the problems associated with software project.<br>(ii) **Distinguish** between infrastructure projects and software projects and explain the activities involved in management. | (7)<br>(6) | BTL4 | Analyzing |
| 2 | **Identify** the various activities covered by software project management. | (13) | BTL3 | Applying |
| 3 | **Discover** the various activities to be performed in "Analyzing the Project Characteristics". | (13) | BTL4 | Analyzing |
| 4 | **Model** the step wise planning of activities for a project with neat diagram. | (13) | BTL3 | Applying |
| 5 | **Select** few problems associated with software projects and explain in detail. | (13) | BTL4 | Analyzing |
| 6 | (i) **Determine** the different ways of categorizing software project in detail.<br>(ii) What is project planning? **Explain** the stepwise project planning activities with necessary illustration. | (6)<br>(7) | BTL5 | Evaluating |
| 7 | **Explain** the following:<br>(i) Setting objective of the project.<br>(ii) Principles of project management process. | <br>(6)<br>(7) | BTL4 | Analyzing |
| 8 | (i) **Examine** in detail about project control cycle.<br>(ii) **Compare** traditional project management practices with modern project management practices. | (6)<br>(7) | BTL4 | Analyzing |
| 9 | (i) **Simplify** the need for project portfolio management.<br>(ii) **Inspect** the significance of strategic programme management. | (7)<br>(6) | BTL4 | Analyzing |
| 10 | **Compose** the ABC college payroll system for the following:<br>(i) Develop the project scope and objective.<br>(ii) Decide the project infrastructure.<br>(iii) List the project products and activities involved in management. | <br>(4)<br>(4)<br>(5) | BTL6 | Creating |
| 11 | **Contrast** the cash flow forecasting with different cost benefit evaluation techniques. | (13) | BTL4 | Analyzing |
| 12 | **Evaluate** the cost-benefit evaluation techniques and its methods with examples. | (13) | BTL5 | Evaluating |
| 13 | **Apply** the cash flows techniques in project development with suitable example. | (13) | BTL3 | Applying |
| 14 | **Identify** the data to be collected in ensuring the execution of project is going according to plan. | (13) | BTL3 | Applying |
| 15 | **Examine** the various aspects of risk evaluation in detail. | (13) | BTL4 | Analyzing |
| 16 | **Explain** the various software development life cycle activities as outlined by ISO12207 with a neat diagram. | (13) | BTL4 | Analyzing |
| 17 | (i) **List** the stepwise planning activities of project plan.<br>(ii) **Explain** the stepwise project plan with an example. | (4)<br>(9) | BTL4 | Analyzing |
| **PART-C** | | | | |
| **Q. No.** | **Questions** | | **BTL** | **Competence** |
| 1 | **Assess** the important characteristics of software development projects which make these harder to manage compared to other types of projects. Say for example, a building construction project. | (15) | BTL5 | Evaluating |

| | | | | |
|---|---|---|---|---|
| 2 | **Evaluate** the main types of personnel employed in an information systems department. For each stage of a typical IS development project, list the types of personnel who are likely to be involved. | (15) | BTL5 | Evaluating |
| 3 | **Suppose** Bright Mouth College has the option of either buying payroll software off-the-shelf at $50000 or employing a programmer for six months at a salary of $5000 to develop the software. Perform cost- benefit analysis for the two options. You can make suitable assumptions regarding any factor that has not been mentioned in this problem statement. | (15) | BTL6 | Creating |
| 4 | **Determine** how discounted cash flow techniques provide better criteria for project selection than net profit or return on investment. | (15) | BTL5 | Evaluating |
| 5 | A public library is considering the **implement**ation of a computer based system to help administer in book loans at libraries.<br>(i) **Identify** the stakeholders.<br>(ii) **List** the objectives the project.<br>(iii) **Examine** and measure the success and failure of the project. | (5)<br>(5)<br>(5) | BTL6 | Creating |

## UNIT II - PROJECT LIFE CYCLE AND EFFORT ESTIMATION

Software process and Process Models – Choice of Process models - Rapid Application development – Agile methods – Dynamic System Development Method – Extreme Programming– Managing interactive processes – Basics of Software estimation – Effort and Cost estimation techniques – COSMIC Full function points - COCOMO II – a Parametric Productivity Model.

### PART A

| Q. No. | Questions | BTL | Competence |
|---|---|---|---|
| 1 | **What** is the function of spiral model? | BTL1 | Remembering |
| 2 | **Compare** object driven project with product driven project. | BTL2 | Understanding |
| 3 | **Classify** the types of management in strategic assessment. | BTL2 | Understanding |
| 4 | **Infer** the core values of Extreme programming. | BTL2 | Understanding |
| 5 | **List** the various agile approaches and tell the advantages of agile unified process. | BTL1 | Remembering |
| 6 | **Outline** the short comings of waterfall model. | BTL2 | Understanding |
| 7 | **Show** the main life cycle phase of Altern process model. | BTL2 | Understanding |
| 8 | **Demonstrate** the pros and cons of using pair programming over programmers working alone. | BTL2 | Understanding |
| 9 | **Find** the aims of RAD model. | BTL1 | Remembering |
| 10 | **Recall** the advantages and disadvantages of Incremental delivery. | BTL1 | Remembering |
| 11 | **State** the impact of MoSCoW Classification. | BTL1 | Remembering |
| 12 | **Illustrate** the problems with over and under estimate. | BTL2 | Understanding |
| 13 | **How** will you measure the effort of the project in parametric model? | BTL1 | Remembering |
| 14 | **Name** the major components of function point analysis. | BTL1 | Remembering |
| 15 | **Show** the ways of moving data groups in COSMIC full function point model. Name the any two levels of COSMIC Model. | BTL2 | Understanding |
| 16 | **Interpret** the factors that are sensitive to system size in COCOMO II model. | BTL2 | Understanding |
| 17 | **Define** the function point Mark II model of transaction. | BTL1 | Remembering |
| 18 | **Tell** the difficulties of project estimation. | BTL1 | Remembering |
| 19 | **Classify** the effort estimation methods. | BTL2 | Understanding |
| 20 | **Outline** the different modes of COCOMO II model. | BTL2 | Understanding |
| 21 | **What** is the major shortcoming of the SLOC measure? | BTL1 | Remembering |

| | | | | |
|---|---|---|---|---|
| 22 | **State** the significance of a "project risk matrix" with an example. | | BTL1 | Remembering |
| 23 | **Name** some units for measuring the size of the software. | | BTL1 | Remembering |
| 24 | **List** the categories of benefits. | | BTL1 | Remembering |
| | **PART B** | | | |
| **Q. No.** | **Questions** | | **BTL** | **Competence** |
| 1 | (i) **Explain** the water fall model in detail with neat diagram.<br>(ii) **Examine** the details of spiral software development life cycle model with necessary illustration. | (6)<br>(7) | BTL4 | Analyzing |
| 2 | **Explain** the following in detail:<br>(i) Software prototyping<br>(ii) Different ways of categorizing prototype. | <br>(6)<br>(7) | BTL4 | Analyzing |
| 3 | (i) **Evaluate** the significance of the incremental delivery with neat diagram.<br>(ii) **Assess** the advantages and disadvantages of incremental delivery. | (7)<br>(6) | BTL5 | Evaluating |
| 4 | (i) **Explain** the dynamic system development method in detail.<br>(ii) **Analyze** the details about SCRUM. | (9)<br>(4) | BTL4 | Analyzing |
| 5 | (i) **Experiment with** the Rapid Application Development model.<br>(ii) **Identify** the features of Agile method. | (8)<br>(5) | BTL3 | Applying |
| 6 | **Examine** the features of Extreme programming in detail and list its advantages and disadvantages. | (13) | BTL4 | Analyzing |
| 7 | (i) **Explain** the management of iterative process in detail.<br>(ii) **Explain** why estimates are carried out at various stages of a software project. | (8)<br>(5) | BTL4 | Analyzing |
| 8 | (i) **Identify** the basis for software estimation in detail.<br>(ii) **Apply** the expert judgment and estimation by analogy in detail. | (8)<br>(5) | BTL3 | Applying |
| 9 | (i) **Experiment with** the extended function point analysis in detail with an example.<br>(ii) **Develop** the staffing pattern. | (7)<br>(6) | BTL3 | Applying |
| 10 | **Demonstrate** the following:<br>(i) Function point mark II method<br>(ii) COSMIC full function point method | <br>(8)<br>(5) | BTL3 | Applying |
| 11 | **Explain** the COCOMO II parametric productive model in detail along with the appropriate steps in effort estimation technique. | (13) | BTL4 | Analyzing |
| 12 | **Interview** the top down and bottom approach of the estimation in detail. | (13) | BTL3 | Applying |
| 13 | The following details are held about previously developed software modules. | | BTL5 | Evaluating |

| Module | Inputs | Entity Types Accessed | Outputs | Days |
|---|---|---|---|---|
| A | 1 | 2 | 10 | 2.60 |
| B | 10 | 2 | 1 | 3.90 |
| C | 5 | 1 | 1 | 1.83 |
| D | 2 | 3 | 11 | 3.50 |

| | | | | | |
|---|---|---|---|---|---|
| | E \| 1 \| 3 \| 20 \| 4.30<br>i) **Determine** the Simons Mark II FPs for each module.<br>ii)Using the results, **decide** the effort needed for the new module. | (8)<br>(5) | | |
| 14 | **Solve** using the project data given below.<br><br>Project \| inputs \| outputs \| entity accesses \| system users \| Program - ming language \| developer days<br>1 \| 210 \| 420 \| 40 \| 10 \| x \| 30<br>2 \| 469 \| 1406 \| 125 \| 20 \| x \| 85<br>3 \| 513 \| 1283 \| 76 \| 18 \| y \| 108<br>4 \| 660 \| 2310 \| 88 \| 200 \| y \| 161<br>5 \| 183 \| 367 \| 35 \| 10 \| z \| 22<br>6 \| 244 \| 975 \| 65 \| 25 \| z \| 42<br>7 \| 1600 \| 3200 \| 237 \| 25 \| y \| 308<br>8 \| 582 \| 874 \| 111 \| 5 \| z \| 62<br>X \| 180 \| 350 \| 40 \| 20 \| y \|<br>Y \| 484 \| 1190 \| 69 \| 35 \| y \|<br><br>Note X and Y are new projects for which estimates of effort are needed.<br>i) What items are size drivers?<br>ii) What items are productivity drivers?<br>iii) What are the productivity rates for programming languages x, y and z?<br>iv) What would be the estimated effort, for projects X and Y using a Mark II function point count? | (3)<br>(3)<br>(3)<br>(4) | BTL6 | Creating |
| 15 | **Apply** the estimates done and explain the problems with over and under estimates with your own example. | (13) | BTL3 | Applying |
| 16 | **Explain** in detail about the managing interactive processes. | (13) | BTL4 | Analyzing |
| 17 | **Analyze** how cost-benefit evaluation techniques can be used to choose the best among competing project proposals. | (13) | BTL4 | Analyzing |

**PART C**

| Q. No. | Questions | | BTL | Competence |
|---|---|---|---|---|
| 1 | **Conclude** the major shortcomings of the waterfall model? Explain how those shortcomings been overcome by the agile model? | (15) | BTL5 | Evaluating |
| 2 | **Compare** the implementation of SCRUM methodology in a Fintech startup developing a new online payment platform versus a traditional financial institution upgrading its legacy banking system. **Evaluate** the effectiveness of SCRUM in each context and discuss challenges encountered. | (15) | BTL5 | Evaluating |
| 3 | **Suppose** you are the manager of a software project. Explain why it would not be proper to **calculate** the number of developers required for the project as a simple division of the effort estimate (in person-months) by the nominal duration estimate (in months). | (15) | BTL6 | Creating |
| 4 | **Assess** the pros and cons of using pair programming over programmers working alone. Based on your analysis, point out if there are any situations where the pair programming technique may not be suitable. | (15) | BTL5 | Evaluating |

| | | | | |
|---|---|---|---|---|
| 5 | **Discuss** how different project parameters (such as team size, complexity, and technology stack) influence effort and cost estimation accuracy. Appraise the use of COCOMO II-A Parametric Productivity Model in a software development project for a global e-commerce platform. | (15) | BTL6 | Creating |

**UNIT III ACTIVITY PLANNING AND RISK MANAGEMENT**

Objectives of Activity planning – Project schedules – Activities – Sequencing and scheduling – Network Planning models – Formulating Network Model – Forward Pass & Backward Pass techniques – Critical path (CRM) method – Risk identification – Assessment – Risk Planning –Risk Management – PERT technique – Monte Carlo simulation – Resource Allocation – Creation of critical paths – Cost schedules.

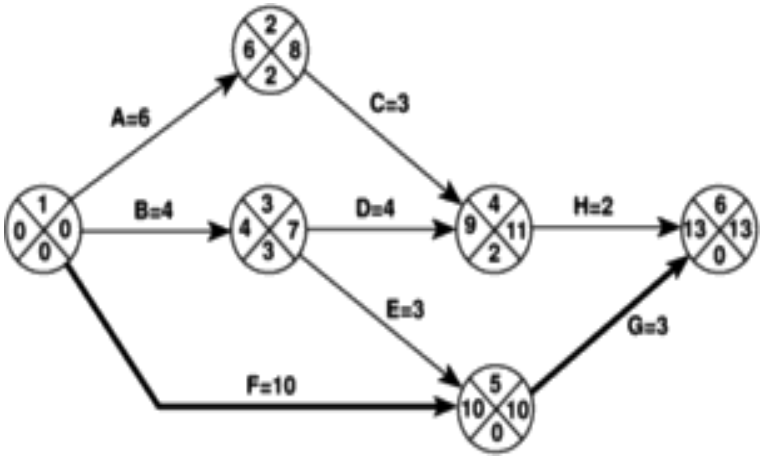
**PART A**

| Q. No. | Questions | BTL | Competence |
|---|---|---|---|
| 1 | **List** the objectives of activity planning. | BTL1 | Remembering |
| 2 | **Compare** work breakdown structure with product break down structure. | BTL2 | Understanding |
| 3 | **Differentiate** Activity-On-Arrow (AOA) from Activity-On-Node (AON). | BTL2 | Understanding |
| 4 | **Show** the various approaches would you use to identify activities. | BTL2 | Understanding |
| 5 | **Outline** the strategies for risk reduction that can be adopted for the following softwareproject risk: Personnel (staffing) shortfalls. | BTL2 | Understanding |
| 6 | **How** would you use hybrid approach of project scheduling? | BTL1 | Remembering |
| 7 | **What** are the different ways of prioritizing the activities in resource allocations? | BTL1 | Remembering |
| 8 | **Name** the changes would you make to shorten the project duration. | BTL1 | Remembering |
| 9 | **How** would you show a “Dangle” in an activity Network? | BTL1 | Remembering |
| 10 | **Define** Hammock activities. | BTL1 | Remembering |
| 11 | **Contrast** between forward pass and backward pass. | BTL2 | Understanding |
| 12 | **Define** activity float. Appraise the need for modeling precedence networks. | BTL1 | Remembering |
| 13 | **Differentiate** ‘Free Floats’ from ‘Interfering Floats’. | BTL2 | Understanding |
| 14 | **Compare** PERT with CPM. | BTL2 | Understanding |
| 15 | **Spell** out the categories of cost. | BTL1 | Remembering |
| 16 | **Classify** the types of risk. | BTL2 | Understanding |
| 17 | **Find** the factors involved in risk planning. | BTL1 | Remembering |
| 18 | **What** do you understand by risk transfer? **Give** an example. | BTL1 | Remembering |
| 19 | **Define** hazard. | BTL1 | Remembering |
| 20 | **Classify** the time estimates in PERT. | BTL1 | Remembering |
| 21 | **Demonstrate** the Monte Carlo simulation method. | BTL2 | Understanding |
| 22 | **Illustrate** the different types of schedules in resource allocation. | BTL2 | Understanding |
| 23 | **List** the categories of resources. | BTL1 | Remembering |
| 24 | **State** the factors that needs to be taken into account while allocating individuals to tasks. | BTL1 | Remembering |

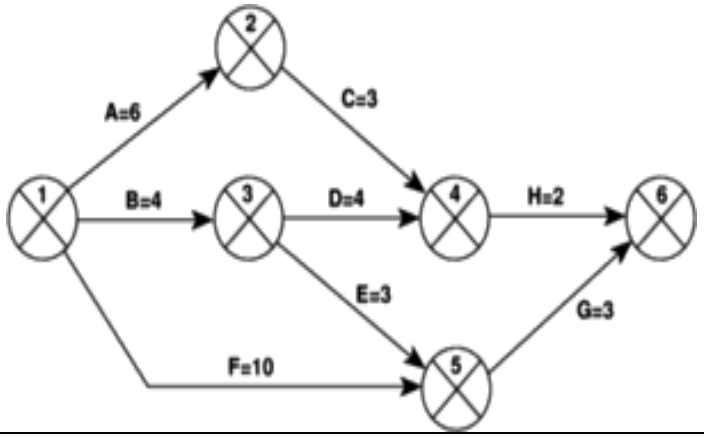
**PART B**

| Q. No. | Questions | | BTL | Competence |
|---|---|---|---|---|
| 1 | (i) **List** the various steps involved in activity planning with its objectives.<br>(ii) **Examine** the sequencing and scheduling activities. | (8)<br>(5) | BTL4 | Analyzing |
| 2 | **Compare** the different approaches of identifying the project activities in detail with neat diagram. | (13) | BTL4 | Analyzing |

| | | | | |
|---|---|---|---|---|
| 3 | **Experiment with** the various network planning model and calculations used in the model. **Develop** the rules for constructing precedence network. | (13) | BTL3 | Applying |
| 4 | (i) **Analyze** the forward pass activity in detail.<br>(ii) **Explain** the backward pass activity with neat diagram. | (8)<br>(5) | BTL4 | Analyzing |
| 5 | (i) **Examine** how the critical path is identified in details with a neat diagram.<br>(ii) **Explain in detail,** on activity float. | (7)<br>(6) | BTL4 | Analyzing |
| 6 | **Construct** an Activity-On-Arrow network and explain the rules & conventions for activity on arrow network. | (13) | BTL3 | Applying |
| 7 | **Inspect** the different CPM forward and backward pass network in detail with neat diagram. | (13) | BTL4 | Analyzing |
| 8 | **Analyze** the term Risk. Discover the issues related to managing the risk with necessary examples. | (13) | BTL4 | Analyzing |
| 9 | (i) **Analyze** the use of checklist and brain storming in identification of risk.<br>(ii) **Classify** the categories of risk. | (8)<br>(5) | BTL4 | Analyzing |
| 10 | (i) **Inspect** on Monte Carlo simulation with an example.<br>(ii) **Distinguish** between PERT and CPM. Explain with an example the use of network techniques PERT and CPM in software project management. | (6)<br>(7) | BTL4 | Analyzing |
| 11 | (i) **Build** PERT network for real time example and explain.<br>(ii) **Identify** the risk identification process and explain the mitigation steps involved in the project management. | (6)<br>(7) | BTL3 | Applying |
| 12 | (i) **Model** the cost schedule in detail.<br>(ii) **Identify** the factors to be considered in allocation of tasks. | (8)<br>(5) | BTL3 | Applying |
| 13 | (i) **Compare** the different categories of project resources in detail.<br>(ii) **Assess** the various scheduling resources with necessary illustration. | (8)<br>(5) | BTL5 | Evaluating |
| 14 | (i) **Build** an activity network using activity on node for office automation.<br>(ii) **Construct** a network diagram representing the following logic. As the project starts, activities A and B can be performed concurrently. When A is finished, activities C and D can start. When B is finished, activities E and F can start. When activities D and E are finished, activity G can start. The project is complete when activities C, F and G are finished. | (5)<br>(8) | BTL6 | Creating |
| 15 | **Explain** how you will identify the major risks and explain the strategies for minimizing each of those risks. | (13) | BTL5 | Evaluating |

| | | | | |
|---|---|---|---|---|
| 16 | (i) **Decide** the objectives of designing a proper project schedule.<br>(ii) **Explain** risk analysis its significance in project management. | (7)<br>(6) | BTL5 | Evaluating |
| 17 | **Identify** the steps involved in the process of resource allocation. | (13) | BTL3 | Applying |
| | **PART C** | | | |
| **Q. No.** | **Questions** | | **BTL** | **Competence** |
| 1 | **Develop** the objectives and sub-objectives of the Bright Mouth College payroll project. What measures of effectiveness could be used to check the success in achieving the objectives of the project? | (15) | BTL6 | Creating |
| 2 | Referring to figure that the duration for activity F is shortened to 8 weeks. **Estimate** the end date for the project. What would the end date for the project if activity F were shortened to 7 weeks? Why?<br>  | (15) | BTL5 | Evaluating |
| 3 | **Construct** an activity network using CPM conventions for the project specified in below table. When you have completed it, evaluate and compare your result with that shown in figure.<br>Table1: An example project specification with estimated activity duration and precedence requirements.<br>Figure: Illustrates the network for the project specified in Table1 | (15) | BTL6 | Creating |

| *Activity* | | *Duration (weeks)* | *Precedents* |
|---|---|---|---|
| A | Hardware selection | 6 | |
| B | Software design | 4 | |
| C | Install hardware | 3 | A |
| D | Code & test software | 4 | B |
| E | File take-on | 3 | B |
| F | Write user manuals | 10 | |
| G | User training | 3 | E, F |
| H | Install & test system | 2 | C, D |

| | | | | |
|---|---|---|---|---|
| |  | | | |
| 4 | Consider a software project with five tasks T1-T5. Duration of the five tasks in weeks is 3,2,3,5 and 2 respectively. T2 and T4 can start when T1 is complete. T3 can start when T2 is complete. T5 can start when T3 and T4 are complete. **Design** the CPM network representation of the project. When is the latest start date of the task T3? What is the float time of the task T4? Which tasks are on the critical path? | (15) | BTL6 | Creating |
| 5 | On a large project it is often the responsibility of a team leader to allocate tasks to individuals. Why might it be unsatisfactory to leave such allocations entirely to the direction of the team leader? **Justify** your answer. | (15) | BTL5 | Evaluating |

**UNIT IV PROJECT MANAGEMENT AND CONTROL**

Framework for Management and control – Collection of data – Visualizing progress – Cost monitoring – Earned Value Analysis – Prioritizing Monitoring – Project tracking – Change control – Software Configuration Management – Managing contracts – Contract Management.

**PART A**

| Q. No. | Questions | BTL | Competence |
|---|---|---|---|
| 1 | **Infer** the advantages and disadvantages of the EVA approach. | BTL2 | Understanding |
| 2 | **Illustrate** the steps in project control. | BTL2 | Understanding |
| 3 | **Classify** the deciding levels of monitoring. | BTL2 | Understanding |
| 4 | **List** the different ways of collecting data. | BTL1 | Remembering |
| 5 | **Outline** the categories of reporting. | BTL2 | Understanding |
| 6 | **What** is the use of check points and monitoring? | BTL1 | Remembering |
| 7 | **Name** the techniques of visualizing progress. | BTL1 | Remembering |
| 8 | **Tell** the advantages of fixed priced contracts. | BTL1 | Remembering |
| 9 | **Contrast between** ball chart and slip chart. | BTL2 | Understanding |
| 10 | **Compare** budgeted cost of work scheduled and budgeted cost of work performed. | BTL2 | Understanding |
| 11 | **Define** critical path and outsource. | BTL1 | Remembering |
| 12 | **Demonstrate** the justifications for project termination. | BTL2 | Understanding |
| 13 | **How** the details needed to carry out EVA to be collected? | BTL1 | Remembering |
| 14 | **How** would you rate the levels to monitor the project? | BTL1 | Remembering |
| 15 | **Illustrate** the need for monitoring the cost. | BTL2 | Understanding |
| 16 | **Classify** the different types of contracts. | BTL2 | Understanding |
| 17 | **Define** the supply processes in managing contract. | BTL1 | Remembering |

| | | | |
|---|---|---|---|
| 18 | **State** open source configuration management tools. | BTL1 | Remembering |
| 19 | **Interpret** the outcome of contract management. | BTL2 | Understanding |
| 20 | **How** would you integrate the popular visual tools in monitoring and tracking the project progress? | BTL1 | Remembering |
| 21 | **Compare** schedule variance, time variance and cost variance. | BTL2 | Understanding |
| 22 | **Define** change control. | BTL1 | Remembering |
| 23 | **Outline** the stages in awarding a contract. | BTL2 | Understanding |
| 24 | **Find** the features of Open Tendering Process. | BTL1 | Remembering |

**PART B**

| Q. No. | Questions | | BTL | Competence |
|---|---|---|---|---|
| 1 | (i) **Discover** the significance of creating the frame work for monitoring the project management and control.<br>(ii) Scope and deliverables of software projects are changed frequently. This has severe implications on the projects. **Examine** how a project manager can minimize their impact on the projects. | (5)<br>(8) | BTL4 | Analyzing |
| 2 | **Simplify** the following in detail:<br>(i) Collecting the data<br>(ii) Project termination review | <br>(5)<br>(8) | BTL4 | Analyzing |
| 3 | (i) **Infer** the use of Gantt and timeline charts in visualizing the project progress with suitable diagrams.<br>(ii) **Analyze** on cost monitoring. | (7)<br>(6) | BTL4 | Analyzing |
| 4 | **Compare** the various ways in visualizing the progress of the project with neat diagram. | (13) | BTL4 | Analyzing |
| 5 | (i) **Apply** the earned value analysis method in your choice of problem and explain.<br>(ii) **Identify** the various steps involved in change control procedure. | (8)<br>(5) | BTL3 | Applying |
| 6 | (i) **Develop** the procedure to get back the project to target.<br>(ii) **Identify** the process of prioritizing monitoring and explain with appropriate examples. | (7)<br>(6) | BTL3 | Applying |
| 7 | (i) **Deduct** the purpose of software configuration management.<br>(ii) **Appraise** about configuration management process in detail. | (8)<br>(5) | BTL5 | Evaluating |
| 8 | (i) **Compare** the various types of contracts with example. **Appraise** the activities involved in software configuration management.<br>(ii) **Determine** the various stages in contract placement in detail. | (8)<br>(5) | BTL5 | Evaluating |
| 9 | (i) **Identify** the salient features of "Fixed price" and "Time and material" contracts model.<br>(ii) **Demonstrate** in detail about contract management. | (8)<br>(5) | BTL3 | Applying |
| 10 | (i) **Inspect** the formal models for cost monitoring with its metrics<br>(ii) **Examine** the levels of monitoring with example. | (8)<br>(5) | BTL4 | Analyzing |
| 11 | (i) **Identify** the typical terms in contract and explain them in detail.<br>(ii) **Solve** how the earned value chart depicts scheduled progress, actual cost and actual progress (earned value) to allow the determination of spending, schedule and time variances with example. | (5)<br>(8) | BTL3 | Applying |

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| 12 | (i) **Explain** the managing contract under ISO12207 approach.<br>(ii) **Rate** the change control procedure with necessary details. | (5)<br>(8) | BTL5 | Evaluating |
| 13 | (i) **Analyze** a baseline in the contest of software configuration management. How do the base lines get updated to form new baselines?<br>(ii) How the following can be prevented while using a configuration management tool? **Examine** it**.**<br>a. Two team members overwriting each other's work<br>b. Accidental deletion of work product.<br>c. Unauthorized modifications to a work product | (6)<br>(7) | BTL4 | Analyzing |
| 14 | **Analyze** the following in detail:<br>a. Partial completion reporting<br>b. Reb/Amber/Green(RAG) Reporting | (8)<br>(5) | BTL4 | Analyzing |
| 15 | (i) Scope and deliverables of software projects are changed frequently. This has severe implications on the projects. **Minimize** the impact of the project analyzing the same as a project manager.<br>(ii) **Determine** the activities involved in software configuration management. | (7)<br>(6) | BTL6 | Creating |
| 16 | (i) **Organize** the various steps involved in change control procedure.<br>(ii) **Identify** the roles and responsibility of a configuration librarian. | (9)<br>(4) | BTL3 | Applying |
| 17 | **Identify** and **Solve** the problems that you are likely to face while developing several versions of the same software product according to a client's request without using any configuration management tools. | (13) | BTL3 | Applying |

**PART C**

| Q. No. | Questions | | BTL | Competence |
|---|---|---|---|---|
| 1 | **Evaluate** the role of software configuration management in a multinational automotive company's development of autonomous driving software. Determine the challenges related to version control, integration management, and ensuring compliance with safety standards. | (15) | BTL5 | Evaluating |
| 2 | **Suppose** you have access to project planning software, investigate the extent to which it offers support for earned value analysis. If it does not so directly, discuss the ways in which it would help you to generate a baseline budget (PV) and track the earned value (EV). | (15) | BTL6 | Creating |
| 3 | **Justify** the following statement:<br>"The project termination review results can change the development process and the project management process" | (15) | BTL5 | Evaluating |
| 4 | **Suppose** a project is budgeted to cost $150000. The project is to be completed in 18 months. After two months, the project is 10% complete at an expense of $25000. It was planned that after two months 15% of the project work should have been completed. Create and compare the cost performance index and the schedule performance index. Interpret these values to assess the progress of the project. | (15) | BTL6 | Creating |

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| 5 | **Formulate** an Earned Value Analysis for a government IT project aimed at digitizing public records. Compare planned versus actual costs and schedule performance indicators. Discuss how EVA metrics can provide early warning signs of project deviations and facilitate corrective actions. | (15) | BTL6 | Creating |

**UNIT V STAFFING IN SOFTWARE PROJECTS**

Managing people – Organizational behavior – Best methods of staff selection – Motivation – The Oldham – Hackman job characteristic model – Stress – Health and Safety – Ethical and Professional concerns – Working in teams – Decision making – Organizational structures – Dispersed and Virtual teams – Communications genres – Communication plans – Leadership.

**PART A**

| Q. No. | Questions | BTL | Competence |
|---|---|---|---|
| 1 | **Outline** the objectives of managing people and organizing teams. | BTL2 | Understanding |
| 2 | **Interpret** the importance causes of "stress" encountered in project. | BTL2 | Understanding |
| 3 | **List** the different motivation theories. | BTL1 | Remembering |
| 4 | **Find** the importance of organizational behavior. | BTL1 | Remembering |
| 5 | **Define** Taylor's model. | BTL1 | Remembering |
| 6 | **Name** the different types of leadership style. | BTL1 | Remembering |
| 7 | **Mention** the stages of team formation model. | BTL1 | Remembering |
| 8 | **State** the methods, would you use to improve motivation. | BTL1 | Remembering |
| 9 | **Interpret** the term job enlargement and job enrichment by your own words. | BTL2 | Understanding |
| 10 | **Classify** the different categories of decisions. | BTL2 | Understanding |
| 11 | **What** is Herzberg's two factor theory and software reliability. | BTL1 | Remembering |
| 12 | **Illustrate** some mental obstacles to good decision making. | BTL2 | Understanding |
| 13 | **Outline** the steps involved in selecting the right person for the job. | BTL2 | Understanding |
| 14 | **What** do you understand by virtual team? | BTL1 | Remembering |
| 15 | **Tell** the basic stages of team development. | BTL1 | Remembering |
| 16 | **Paraphrase** the following: Maslow's hierarchy of need. | BTL2 | Understanding |
| 17 | **Compare** personal stress with organizational stress. | BTL2 | Understanding |
| 18 | **Outline** the measures to enhance the job design in Oldham-Hackman model characteristic model. | BTL2 | Understanding |
| 19 | **Identify** the advantages of the chief programmer team. | BTL2 | Understanding |
| 20 | **How** would you apply your understanding in "Egoless Programming"? | BTL1 | Remembering |
| 21 | **Classify** the modes of communication. | BTL2 | Understanding |
| 22 | **List** the problems that are faced by matrix team organization. | BTL1 | Remembering |
| 23 | **State** the advantages of functional team formats. | BTL1 | Remembering |
| 24 | **Infer** the general approach which is followed for recruitment process. | BTL2 | Understanding |

**PART B**

| Q. No. | Questions | | BTL | Competence |
|---|---|---|---|---|
| 1 | **Illustrate** the organizational behavior with an example. | (13) | BTL3 | Applying |
| 2 | (i) **Identify** the factors to be considered in the Oldham-Hackman job characteristic model.<br>(ii) **Interpret** the Vroom's expectancy theory. | (8)<br>(5) | BTL3 | Applying |
| 3 | **Demonstrate**, how would you select a new staff into a project along with the recruitment process? | (13) | BTL3 | Applying |

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| 4 | (i) **Examine** the details for Maslow's Hierarchy of needs with an example.<br>(ii) **Analyze** the details on Taylorist model. | (8)<br>(5) | BTL4 | Analyzing |
| 5 | **Explain** the following in detail:<br>(i) Stress<br>(ii) Health and safety | <br>(6)<br>(7) | BTL5 | Evaluating |
| 6 | (i) **Compose** some ethical and professional concern.<br>(ii) **Develop** the project and functional organization structure and list out the advantages functional team format. | (5)<br>(8) | BTL6 | Creating |
| 7 | **Inspect** the various models of motivation in detail. | (13) | BTL4 | Analyzing |
| 8 | (i) **Select** the metrics and explain the issues involved in selecting the right person for the job.<br>(ii) **Identify** the importance of working together as a team and thevarious aspects of team development. | (5)<br>(8) | BTL3 | Applying |
| 9 | **Illustrate** the term "Decision Making" in the process of managing people and organizing teams. With an example explain the strength ofa team. | (13) | BTL3 | Applying |
| 10 | **Compare** different types of team structures used in the project management. | (13) | BTL4 | Analyzing |
| 11 | (i) **Examine** the organization and team structure in detail.<br>(ii) **Classify** team and compare the types of team structures. | (5)<br>(8) | BTL4 | Analyzing |
| 12 | (i) **Describe** in detail about dispersed and virtual team.<br>(ii) **Summarize** details on communication genres. | (5)<br>(8) | BTL4 | Analyzing |
| 13 | (i) **Assess** the factors and characteristics that are involved in making a team.<br>(ii) **Recommend** the different ways to improve the group performance. | (7)<br>(6) | BTL5 | Evaluating |
| 14 | (i) **Build** the leadership models with the functions of a leader and explain with an example.<br>(ii) **Model** a communication plan and explain in detail. | (7)<br>(6) | BTL3 | Applying |
| 15 | **Discover** the ways in which a software development department can be structured and illustrate with suitable diagram. | (13) | BTL4 | Analyzing |
| 16 | **Simplify** the term leadership and explain different kinds of leadership power. Explain in detail about leadership style. | (7)<br>(6) | BTL4 | Analyzing |
| 17 | **Categorize** each participant according to the Belbin classification in your final year project. Were there any duplications or gaps in any of the roles? Did this seem to have any impact on your progress?Propose your solution. | (13) | BTL4 | Analyzing |

**PART C**

| Q. No. | Questions | | BTL | Competence |
|---|---|---|---|---|
| 1 | **Suppose** an organization has detected low job satisfaction in the following departments:<br>i. The system testing group;<br>ii. The computer applications help desk;<br>iii. Computer batch input;<br>How could these jobs be redesigned to give more job satisfaction? | (15) | BTL6 | Creating |
| 2 | **Combine** examples from the tech industry, examine how different organizational structures (e.g., hierarchical versus flat) impact team dynamics and decision-making processes in software development | (15) | BTL6 | Creating |

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| | teams. Discuss implications for project management and productivity. | | | |
| 3 | **Evaluate** why software development houses prefer to use project organization over functional organization. Explain the advantages of a functional organization over a project organization. | (15) | BTL5 | Evaluating |
| 4 | Being a project manager, **decide** the characteristics that you would look for in a software developer while trying to select personnel for your team. | (15) | BTL5 | Evaluating |
| 5 | Does staff selection relate with quality of product? **Justify** with appropriate reason. | (15) | BTL5 | Evaluating |

**Prepared by** **Verified by** **HOD**