# GUJARAT TECHNOLOGICAL UNIVERSITY

## BE-7 SEMESTER – OLD PAPER – S22 TO S26 – QUESTION BANK

**Subject Name & Code:** Project Management - 3171506

---

## Chapter 1: Project Overview, Life Cycle, Portfolio, Formulation and Selection

### Repeated Questions:

**1. Project Life Cycle & Management:**

- **Q.** Explain the life cycle of a project. [Diagram/S-curve expected – refer to original papers] **(SUMMER 2022, 4 Marks; SUMMER 2023, 7 Marks; SUMMER 2024, 4 Marks; SUMMER 2025, 3 Marks)**
- **Q.** Differentiate between Project Management and General Management. **(SUMMER 2022, 3 Marks; SUMMER 2025, 4 Marks; WINTER 2024, 7 Marks; SUMMER 2026, 4 Marks)**

**2. Portfolio & Project Objectives:**

- **Q.** Explain the project portfolio process. **(SUMMER 2022, 7 Marks; SUMMER 2024, 7 Marks; SUMMER 2025, 7 Marks; WINTER 2025, 7 Marks)**
- **Q.** What are the three objectives/goals of a project? [Iron Triangle: Performance/Scope, Time, Cost] **(SUMMER 2023, 3 Marks; WINTER 2023, 4 Marks; WINTER 2024, 4 Marks)**

### Other Important Questions:

**1. Project – Definition & Characteristics:**

- **Q.** What is a project? **(SUMMER 2022, 3 Marks; WINTER 2024, 3 Marks; SUMMER 2026, 3 Marks - also asks definition of Project Management)**
- **Q.** Give three examples of projects found in your city, region, or country. Justify your answer using the characteristics of a project. **(WINTER 2022, 3 Marks)**
- **Q.** Use the characteristics of a project to differentiate it from a non-project. **(SUMMER 2024, 3 Marks)**
- **Q.** What do you mean by derivative projects, platform projects, breakthrough projects, and R&D projects? **(WINTER 2025, 4 Marks)**

**2. Project Formulation:**

- **Q.** What is an approach of project formulations? **(WINTER 2023, 3 Marks)**
- **Q.** Write the advantages of project formulation. **(SUMMER 2023, 4 Marks)**
- **Q.** Explain the different stages of project formulation in details. **(SUMMER 2026, 7 Marks)**

**3. Negotiation & Types of Life Cycles:**

- **Q.** Contrast win-lose negotiation with win-win negotiation and explain why the latter is so important in project management. **(WINTER 2022, 4 Marks)**
- **Q.** Brief about the two types of project life cycles. [Refers to predictive/plan-driven vs. adaptive/change-driven] **(SUMMER 2024, 4 Marks)**

**4. Project Selection:**

- **Q.** Enlist the Non numeric methods used in project selection and explain any one method in details. **(SUMMER 2026, 4 Marks)**
- **Q.** Nina is trying to decide in which of four shopping centers to locate her new boutique. Because of the nature of her store, she has decided that the class of clients is the most important consideration. Following this the rent is 90 percent as important as the class of clients. An indoor, temperature-controlled mall is desirable and she rates this as about 95 percent as important as rent. Last, a higher volume of shoppers means more potential sales; she thus rates this factor as

80 percent as important as rent. As an aid in visualizing her location alternatives, she has constructed the following table. A “good” is scored as 3, “fair” as 2, and “poor” as 1. Use a weighted score model to help Nina select a location. [Table: Locations 1, 2, 3, 4 – Class of clients: fair, good, poor, good; Rent: good, fair, poor, good; Indoor mall: good, poor, good, poor; Volume of shoppers: good, fair, good, poor] **(WINTER 2025, 7 Marks OR)**

## Chapter 2: Organizing the Project

### Repeated Questions:

**1. Project Manager & Team:**

- **Q.** Explain the roles and responsibilities of a Project Manager. **(SUMMER 2022, 3 Marks; SUMMER 2023, 7 Marks OR; SUMMER 2024, 7 Marks; WINTER 2023, 7 Marks OR; WINTER 2025, 7 Marks; SUMMER 2026, 3 Marks)**
- **Q.** Write a short note on the project team. / Explain the roles of the project team. **(SUMMER 2022, 4 Marks; SUMMER 2023, 3 Marks; WINTER 2025, 3 Marks - roles of leader, member, contributor in a team)**

**2. Organizational Structure:**

- **Q.** Explain the functional organizational structure. **(SUMMER 2023, 4 Marks; SUMMER 2025, 7 Marks OR)**

### Other Important Questions:

**1. Organizing Projects:**

- **Q.** Explain the following ways of organizing projects: pure project organization, functional project organization, matrix project organization. **(WINTER 2022, 7 Marks)**
- **Q.** Explain the project based organizational structure in details and state its advantages and disadvantages. **(SUMMER 2026, 7 Marks OR)**

**2. Project Manager & Team Members:**

- **Q.** Enlist the characteristics of effective team members in a project. **(SUMMER 2024, 3 Marks)**
- **Q.** Write a short note on Project management as a Profession. **(SUMMER 2023, 7 Marks OR)**
- **Q.** What is meant by “micromanagement”? Why is it undesirable? **(WINTER 2022, 3 Marks)**
- **Q.** Explain any three project manager selection criteria. **(SUMMER 2025, 3 Marks; SUMMER 2026, 7 Marks - enlist criteria and explain any three)**
- **Q.** “The PM must negotiate for almost everything the project needs” – Justify the statement. **(WINTER 2025, 3 Marks)**

## Chapter 3: Planning the Project

### Repeated Questions:

**1. Work Breakdown Structure (WBS):**

- **Q.** Explain Work Breakdown Structure (WBS). [Be ready to create a 3-level WBS for a sample project as seen in papers] **(SUMMER 2022, 7 Marks; SUMMER 2025, 7 Marks; WINTER 2024, 7 Marks OR)**
- **Q.** Summarize the procedure to create a WBS. / Enlist the steps to create the work breakdown structure. **(WINTER 2025, 4 Marks; SUMMER 2026, 3 Marks OR)**

**2. Planning Process & RACI Matrix:**

- **Q.** Explain the planning process. / Write planning process – Nuts and Bolts. **(SUMMER 2022, 7 Marks OR; WINTER 2023, 3 Marks OR; SUMMER 2025, 4 Marks)**
- **Q.** Explain about the RACI matrix. **(SUMMER 2023, 7 Marks OR; SUMMER 2024, 4 Marks; WINTER 2025, 3 Marks - benefits of RACI matrix)**

### Other Important Questions:

**1. Project Planning:**

- **Q.** List the steps involved in the planning process of a project. **(WINTER 2024, 3 Marks)**
- **Q.** Explain any three elements of project planning. **(SUMMER 2023, 3 Marks OR)**
- **Q.** Discuss the benefits of project planning. **(WINTER 2025, 7 Marks)**
- **Q.** Categorize the contents of a project plan necessary for large non-routine projects. **(WINTER 2022, 7 Marks)**
- **Q.** Write a short note on Project planning using Mind mapping. **(SUMMER 2024, 7 Marks OR; WINTER 2025, 3 Marks - importance of mind mapping in project planning)**
- **Q.** Provide steps you will include in Project Charter to control “scope creep”. **(WINTER 2022, 4 Marks)**

**2. Work Breakdown Structure (WBS):**

- **Q.** Write down the characteristics of work breakdown structure. **(SUMMER 2023, 4 Marks OR; SUMMER 2026, 4 Marks)**
- **Q.** Differentiate between the Project Plan and the Work Breakdown Structure. **(SUMMER 2024, 3 Marks OR)**
- **Q.** Show the format of a WBS as an output of Microsoft Project software. **(SUMMER 2024, 3 Marks)**
- **Q.** Explain the different forms of work breakdown structure in details. **(SUMMER 2026, 7 Marks)**
- **Q.** Develop a WBS (Gozinto tree) with at least three levels for a project. [Numerical/Descriptive Type] **(WINTER 2022, 7 Marks OR; SUMMER 2024, 7 Marks OR)**

## Chapter 4: Budgeting the Project

### Repeated Questions:

**1. Cost Estimating:**

- **Q.** Explain cost estimating in a project. How one can improve it? / Explain about the cost estimating. **(SUMMER 2022, 4 Marks; SUMMER 2023, 7 Marks; WINTER 2023, 3 Marks OR - methods to improve; WINTER 2025, 7 Marks OR - ways to improve cost estimates)**

**2. Budgeting Approaches & Uncertainty:**

- **Q.** Explain top-down and bottom-up approaches for budgeting. **(SUMMER 2023, 4 Marks; SUMMER 2025, 4 Marks OR; WINTER 2025, 3 Marks OR - top-down method; SUMMER 2026, 3 Marks - differentiate top-down and bottom-up)**
- **Q.** Discuss budget uncertainty and risks associated with it. **(SUMMER 2022, 7 Marks; WINTER 2023, 4 Marks; SUMMER 2025, 7 Marks OR)**

### Other Important Questions:

**1. Budgeting Methods & Objectives:**

- **Q.** What are different budgeting methods? **(SUMMER 2022, 3 Marks)**
- **Q.** Contrast the disadvantages of top-down budgeting and bottom-up budgeting. **(WINTER 2022, 3 Marks)**
- **Q.** Write a note on: Methods of budgeting. **(SUMMER 2024, 7 Marks OR)**
- **Q.** Which are the Objectives and Advantages of Budgeting? **(WINTER 2023, 7 Marks)**

**2. Learning Curve (Numerical):**

- **Q.** The consultants are each billed out at Rs. 65/hour… Past experience indicates that projects of this type follow a 78 percent learning curve. Estimate the budget and completion time… [Numerical Type – Learning Curve Application] **(WINTER 2022, 7 Marks OR)**
- **Q.** Your firm designs PowerPoint slides for computer training classes, and you have received a request to bid on a contract to produce the slides for 8 sessions. From previous experience, you know that your firm follows an 85 percent learning rate. For this contract it took 50 hours for designing slides for the first session. Your firm bills at the rate of Rs. 100/hour and the overhead is Rs. 600 per session. If your profit margin is 20 percent, what will be the total bid price you will offer? [Numerical Type – Learning Curve Application] **(WINTER 2025, 7 Marks)**

## Chapter 5: Project Network Theory (Scheduling)

### Repeated Questions:

**1. PERT, CPM & Gantt Chart:**

- **Q.** Differentiate between PERT and CPM. **(SUMMER 2022, 4 Marks; SUMMER 2025, 3 Marks OR; WINTER 2024, 7 Marks)**
- **Q.** Explain the Gantt chart. [Table 3 activity details given for W25 – refer to original W25 Q5(c)] **(SUMMER 2022, 4 Marks; SUMMER 2025, 4 Marks OR; WINTER 2023, 3 Marks; WINTER 2024, 7 Marks OR; WINTER 2025, 7 Marks - draw Gantt chart for Table 3)**

**2. Network Diagram & Critical Path (Numerical):**

- **Q.** Construct a network diagram (AON/AOA) and find the critical path. Draw network, calculate ES, EF, LS, LF, slack, identify critical path. [Tables given for W25 and S26 – refer to original papers] **(SUMMER 2022, 7 Marks; WINTER 2022, 7 Marks; SUMMER 2024, 7 Marks; WINTER 2025, 7 Marks - critical path and duration for Q5(c) Table 3; SUMMER 2026, 7 Marks)**

### Other Important Questions:

**1. Network Terminology:**

- **Q.** Explain the terms: (1) Activity (2) Event (3) Merged event. **(SUMMER 2023, 3 Marks; SUMMER 2026, 3 Marks - burst event and merge event)**
- **Q.** What is AON and AOA diagrams? **(SUMMER 2022, 3 Marks OR)**
- **Q.** Explain about the distribution curve for PERT. **(SUMMER 2023, 4 Marks)**
- **Q.** Explain the different types of float. **(SUMMER 2026, 4 Marks)**

**2. Fulkerson's Rule:**

- **Q.** Explain Fulkerson’s rule for numbering of nodes. **(SUMMER 2025, 7 Marks OR)**
- **Q.** Explain with example Fulkerson’s rule. **(SUMMER 2022, 7 Marks OR)**

**3. PERT vs. CPM, Updating & Sequencing:**

- **Q.** Illustrate with examples the essential difference between PERT and CPM. **(WINTER 2023, 7 Marks)**
- **Q.** What is meant by updating and scheduling of resources? Explain. **(WINTER 2023, 4 Marks)**
- **Q.** Some of the planning process steps for a new product design are given below. Arrange these in their sequence of execution. [Tests understanding of logical sequence before networking] **(WINTER 2022, 3 Marks)**

## Chapter 6: Resource Allocation, Critical Chain and Crashing

### Repeated Questions:

**1. Resource Loading & Leveling:**

- **Q.** Explain Resource Loading and Resource Leveling. **(SUMMER 2023, 7 Marks; SUMMER 2024, 4 Marks; SUMMER 2025, 4 Marks OR; WINTER 2023, 3 Marks; SUMMER 2026, 3 Marks OR - define resource loading and resource leveling)**

**2. Critical Chain & Crashing:**

- **Q.** Explain Goldratt's Critical Chain. [Focus: Parkinson's Law, student syndrome, project/feeding buffers] **(WINTER 2023, 7 Marks; SUMMER 2024, 4 Marks; SUMMER 2025, 7 Marks OR)**
- **Q.** Describe crashing the project network. [Key time-cost trade-off technique; often numerical] **(SUMMER 2025, 3 Marks OR; WINTER 2024, 4 Marks)**

### Other Important Questions:

**1. Resource Allocation Problems & Importance:**

- **Q.** Explain any four problems for Resource allocations. **(SUMMER 2023, 4 Marks)**
- **Q.** Which are the different problems faced in allocating the resources? **(WINTER 2023, 4 Marks)**
- **Q.** Explain the importance of resource allocation in project management. **(SUMMER 2026, 4 Marks OR)**
- **Q.** Write in brief about: Allocating scarce resources to projects. **(WINTER 2025, 4 Marks)**
- **Q.** Suppose you need to borrow resources from your ongoing project and use it in another project. Which point would you take care of if your ongoing project has a life cycle of "J"-type? **(WINTER 2025, 4 Marks)**

**2. Resource Loading, Buffers & Rules:**

- **Q.** Explain the factors affecting resource loading. **(SUMMER 2023, 7 Marks; SUMMER 2026, 7 Marks OR - factors and consequences of overloading resources)**
- **Q.** Define: (1) Project buffer (2) Feeding buffer (3) Resource buffer. **(SUMMER 2023, 3 Marks; SUMMER 2025, 3 Marks)**
- **Q.** What is meant by the term "student syndrome"? **(SUMMER 2024, 3 Marks OR; WINTER 2025, 3 Marks)**
- **Q.** Provide meaning of the following rules for assigning preference: as soon as possible, as late as possible, shortest task duration first, minimum slack first, etc. **(WINTER 2022, 3 Marks; SUMMER 2024, 3 Marks)**

**3. Crashing (Numerical):**

- **Q.** Given the following project… The contract includes a penalty clause… Would the project be benefited in terms of total cost, if it is crashed by 1 day? [Numerical Type – Crashing with Cost Analysis] **(SUMMER 2024, 7 Marks OR)**
- **Q.** Given the following project… Suppose the project must be crashed by 2 days. Assess the options… [Numerical Type – Crashing] **(WINTER 2022, 7 Marks)**

## Chapter 7: Monitoring and Controlling the Project

### Repeated Questions:

**1. Earned Value & Scope Creep:**

- **Q.** Explain Earned Value Analysis/Chart. **(WINTER 2023, 4 Marks; SUMMER 2023, 7 Marks; SUMMER 2024, 4 Marks; SUMMER 2026, 4 Marks - earned value chart with diagram)**
- **Q.** Define Scope Creep and its causes. **(SUMMER 2023, 3 Marks; WINTER 2023, 4 Marks; WINTER 2024, 7 Marks OR; WINTER 2025, 4 Marks - meaning and main causes; SUMMER 2026, 7 Marks)**

**2. Data Collection:**

- **Q.** What are the different ways to collect data? / What is data collection and reporting? **(WINTER 2023, 7 Marks; WINTER 2024, 3 Marks)**

### Other Important Questions:

**1. Data Collection & Reporting:**

- **Q.** Write advantages of data reporting. **(SUMMER 2023, 4 Marks)**
- **Q.** Which different formats are used to collect data through the monitoring system? **(SUMMER 2024, 4 Marks OR)**
- **Q.** Enlist different types of report used for data reporting and explain any one type briefly. **(SUMMER 2026, 3 Marks)**

**2. Control Systems:**

- **Q.** Explain the plan-monitor-control cycle. **(WINTER 2023, 7 Marks OR)**
- **Q.** What are the different types of control? **(WINTER 2023, 3 Marks)**
- **Q.** Explain the considerations and steps involved in designing a project control system. **(WINTER 2024, 4 Marks)**

**3. Earned Value Analysis (Application):**

- **Q.** Using earned value analysis, explain how the total cost of a partially completed project can be estimated. **(WINTER 2022, 4 Marks; WINTER 2025, 4 Marks OR - numerical: find difference between BAC and EAC)**

## Chapter 8: Project Termination, Audit and Evaluation

### Repeated Questions:

**1. Project Termination:**

- **Q.** Explain the different types of project termination. **(SUMMER 2025, 7 Marks; WINTER 2023, 7 Marks OR; WINTER 2022, 4 Marks; SUMMER 2026, 7 Marks OR - factors considered for termination and types)**

**2. Project Audit & Evaluation:**

- **Q.** Explain the steps of a project audit. **(SUMMER 2025, 7 Marks OR; WINTER 2023, 3 Marks OR; WINTER 2024, 4 Marks OR)**
- **Q.** Explain project evaluation (Pre, Ongoing, Post). **(SUMMER 2025, 4 Marks; SUMMER 2023, 4 Marks OR)**

### Other Important Questions:

**1. Project Termination:**

- **Q.** Define project termination and explain any one factor considered in terminating the project. **(SUMMER 2025, 3 Marks)**
- **Q.** Why is project termination an essential phase in project management? **(WINTER 2024, 3 Marks OR)**
- **Q.** Explain Project termination process in detail. **(SUMMER 2023, 7 Marks OR)**

**2. Project Audit:**

- **Q.** Explain the objective of project Audit. **(WINTER 2023, 3 Marks; WINTER 2025, 4 Marks OR - enlist objectives of project audit)**
- **Q.** Brief about the information to be contained in a project audit report. **(WINTER 2022, 4 Marks; SUMMER 2024, 4 Marks OR)**
- **Q.** Explain the terms: (1) General Audit (2) Detailed audit (3) Technical audit. **(SUMMER 2023, 3 Marks OR)**
- **Q.** Differentiate between financial audits and project audits. **(SUMMER 2026, 4 Marks OR)**

**3. Project Evaluation:**

- **Q.** What is project evaluation, and why is it important in project management? **(WINTER 2024, 4 Marks)**
- **Q.** Differentiate between the Pre-project evaluation and Post project evaluation. **(SUMMER 2023, 4 Marks OR)**
- **Q.** Explain the objectives of project evaluation. **(SUMMER 2026, 3 Marks OR)**

## Chapter 9: Risk Management (Uncategorised Questions)

### Repeated Questions:

*None identified.*

### Other Important Questions:

**1. Risk Management:**

- **Q.** What is the Game theory approach to analyze risk? **(WINTER 2025, 3 Marks)**
- **Q.** Following table shows the results of a FMEA conducted to assess the risk of a new drug development project at a pharmaceutical company. [Potential failure risk – S, L, D: new drug is not safe – 8, 4, 5; drug is not effective – 8, 6, 5; drug interacts with other drugs – 6, 3, 8; another company beats it to the market with a similar drug – 7, 3, 2; company is not able to produce the drug in mass quantities – 6, 4, 4] (S – Severity, L – Likelihood, D – Detectability. Ranks are on a ten-point scale.) Which two failure risks would you address first? And why? **(WINTER 2025, 4 Marks - marks inferred)**
- **Q.** Explain the different types of project uncertainty in details. **(SUMMER 2026, 4 Marks)**
- **Q.** Enlist the methods used in quantitative risk analysis and explain any two methods in details. **(SUMMER 2026, 7 Marks)**

**********