Times asked: 6 times
5 times
4 times
3 times
2 times
1 time

# indicates 5-mark question

View complete PYQ analysis & Previous year papers

Project Management Question bank

1. Project Management Foundation

1. Explain the triple constraints in Project Management. #
2. Differentiate between Functional, Pure Project and Matrix organizations.
3. Why is project management essential in today's business environment, and how does it help achieve organizational goals?
4. What is the project life cycle? How is the cost of change, risk, and influence of stakeholders affected by project time during the life cycle of the project?
5. Write a short note on: Role of Project Manager. #

2. Initiating Projects

6. Explain the stages of team development and growth. #
7. NPV-Based Project Selection Problems,
   i. A project requires an initial investment of Rs. 30,000 in a project.
   The project generates annual cash inflows of Rs. 10,000, Rs. 12,000 and Rs. 15,000 for 3 years respectively. If rate of discount is 12% per annum, calculate Net Present Value. Comment on whether the project should be accepted or rejected.
   ii. ABC Industries has a potential project with an initial cost of Rs. 20,00,000. The capital budget allows to accept only one project. Using the NPV method, which project should be selected?

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3.	6,00,000	5,00,000	6,00,000	7,00,000
4.	6,00,000	5,00,000	4,00,000	9,00,000
5.	6,00,000	5,00,000	2,00,000	11,00,000
Discount Rate	9%	6%	15%	22%

8. What are the numeric and non-numeric models of project selection? #
9. Write a short note on: Project charter and Project sponsor. #
10. Write a short note on: Project portfolio process. #
11. What are the advantages of an effective team and barriers to team effectiveness? #

3. Project Planning and Scheduling

12. Problem on Project Network Diagram, Critical Path, Duration, Probabilities (PERT/CPM)
    i. The R & D project has a list of tasks to be performed whose time estimates are given below:

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    a) Draw the project network.
    b) Find the critical path.
    c) Find the time required to complete the project and identify the critical activities.

13. Write a short note on: Work Breakdown Structure (WBS). #
14. Explain and differentiate between top-down and bottom-up budgeting approaches. #
15. Explain GANTT chart with suitable example. #
16. Write a short note on: Project Management Information System (PMIS). #
17. Describe various project cost estimation and scheduling techniques. #

4. Planning Projects

18. Explain Goldratt's critical chain method. #
19. Explain the probability and impact matrix. What are the risk response strategies for negative risks (threats) and positive risks (opportunities)?

5. Project Executing, Monitoring & Controlling

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    i. A project in its 20th week has an actual cost of Rs. 250,000. It was scheduled to have spent Rs. 241,000. For the work performed to date, the budgeted value is Rs. 252,000. What are the cost and schedule variances for the project? What are the SPI and CPI? #
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21. How is communication planned and managed in project management?

22. What are the responsibilities of the project auditor? What is essential for a successful project audit?
23. Write a short note on: Project procurement management. #
24. What are the different types of contracts? Draw the graph showing risk exposure to the buyer and seller in various contract types.
25. Define scope creep. What are two ways to control it in a project? #
26. Describe Earned Value Management technique in Project Management. #
27. Briefly describe the purchasing cycle. #

6. Project Leadership, Ethics and Closure

28. What is project termination? Discuss the various reasons for project termination and explain different types of project termination.
29. Explain the importance of ethics in projects. #
30. Explain multicultural and virtual projects. #

Module-wise Marks Weightage and Question Count

	1	2	3	4	5	6
2025 Aug	25 (3)	25 (3)	25 (3)	15 (2)	20 (3)	15 (2)
2025 May	20 (3)	25 (3)	25 (3)	15 (2)	25 (4)	20 (3)
2024 Dec	15 (2)	20 (3)	25 (4)	20 (3)	25 (3)	25 (3)
2024 May	5 (1)	25 (4)	30 (4)	20 (3)	25 (4)	20 (3)
2023 Dec	30 (4)	15 (2)	20 (3)	15 (2)	40 (5)	10 (1)
2023 May	10 (1)	35 (5)	15 (2)	20 (3)	35 (5)	15 (2)
Estimate	**15-20 (2-3)**	**25 (3)**	**25 (3)**	**15-20 (2-3)**	**25 (3-4)**	**15-20 (2-3)**
Total	105	145	140	105	170	105

Asked once:

1. Project Management Foundation

1. Explain conflicts in Project Management. Why are negotiations important in Project Management?
2. Describe the typical and atypical project life cycles, highlighting the stages in the stage-gate process.

2. Initiating Projects

3. Explain the significance of IRR method in project selection. #

3. Project Planning and Scheduling

4. What is concurrent engineering? #

4. Planning Projects

5. Who are the stakeholders in projects? Why is communication the most important part of a project manager's job?
6. Explain the project buffer. #
7. What is the difference between resource loading and resource levelling? #
8. Explain the risk breakdown structure. #

5. Project Executing, Monitoring & Controlling

9. Draw an Earned Value chart. Describe the three variances of it and explain their significance.
10. What are the advantages and risks of outsourcing in project management? #
11. What is the difference between contracting and outsourcing? #
12. What is the importance of vendor documents? How should vendor documents be preserved?
13. Why are meetings useful in project monitoring? What rules should be followed to maximize the effectiveness of meetings?

6. Project Leadership, Ethics and Closure

14. Explain the project management template with a sample template sheet.

Project Management Answer bank

# indicates 5-mark question

1. Project Management Foundation

1. Explain the triple constraints in Project Management. #

The Triple Constraint (also known as the Project Management Triangle) refers to the three key factors that must be balanced in any project: Scope, Time, and Cost. These constraints are interdependent, meaning a change in one affects the others.

Components of Triple Constraint

Scope

- Scope defines the total work to be completed in the project.
- It includes requirements, features, and final deliverables.
- It clearly specifies what is included and what is excluded in the project.

Example: Developing a mobile app with login, dashboard, and payment features.

Time

- Time refers to the duration required to complete the project.
- It includes scheduling, deadlines, and important milestones.
- It is managed using tools like Gantt charts and project timelines.

Example: Completing the mobile app within 3 months.

Cost

- Cost represents the total budget required for the project.
- It includes expenses like manpower, tools, and resources.
- Proper cost planning ensures the project stays within budget.

Example: Budget for developers, software tools, and testing.

Relationship Between Constraints

The three constraints are interdependent and directly related:

- **Increase in scope** → increases time and cost.
- **Reduction in time** → may increase cost or reduce scope.
- **Reduction in cost** → may reduce scope or increase time.

Hence, a project manager must balance all three constraints to ensure project success.

2. Differentiate between Functional, Pure Project and Matrix organizations.

Parameter	Functional Organization	Pure Project Organization	Matrix Organization
Structure	Based on departments (HR, IT, Finance)	Separate team for each project	Combination of pure project and functional
Authority	Functional manager controls departmental activities	Project manager has full control	Shared between functional & project manager
Project Manager Role	Little or no authority	Full authority over project	Moderate authority
Resource Allocation	Resources stay within departments.	Dedicated resources for project	Resources shared across projects.
Decision making	Slow (hierarchical)	Fast (Centralized)	Moderate
Communication	Vertical (department-based)	Direct and fast	Both vertical and horizontal
Flexibility	Low flexibility	High flexibility	Medium flexibility
Team Loyalty	Towards department	Towards project	Divided between both
Cost	Low-cost structure	High cost (duplicate resources)	Moderate cost
Complexity	Simple structure	Simple but projects operate independently	Complex to manage
Example	A college where teachers belong to departments like Computer or Mechanical.	A construction company building a bridge with a dedicated team.	An IT company where developers report to both a project manager and a functional manager.

3. Why is project management essential in today's business environment, and how does it help achieve organizational goals?

Project Management is the process of planning, organizing, executing, and controlling project activities to achieve specific goals within the constraints of time, cost, and scope.

A project is a temporary activity undertaken to create a unique product, service, or result. Project management ensures that the project is completed efficiently and successfully.

Importance of Project Management

- **Handles increasing complexity**
  Helps manage large projects involving multiple teams and technologies.
- **Efficient use of resources**
  Ensures proper use of manpower, time, and budget without unnecessary wastage.
- **Completes work on time and within budget**
  Helps meet deadlines while keeping costs under control.
- **Improves quality of work**
  Ensures deliverables meet required standards and expectations.
- **Better risk management**
  Identifies risks early and helps reduce their impact.
- **Improves communication and coordination**
  Ensures smooth interaction between teams and stakeholders.

How Project Management Helps Achieve Organizational Goals

- **Aligns projects with business objectives**
  Ensures projects directly support organizational strategy
- **Increases productivity and efficiency**
  Proper planning and execution lead to better output with fewer resources
- **Ensures customer satisfaction**
  Timely delivery and quality results improve customer trust
- **Improves competitive advantage**
  Helps organizations deliver better products faster than competitors

Example: A software company developing an application uses project management to plan tasks, allocate resources, and meet deadlines, helping achieve customer satisfaction and business growth.

4. What is the project life cycle? How is the cost of change, risk, and influence of stakeholders affected by project time during the life cycle of the project?

Project Life Cycle

The Project Life Cycle refers to the sequence of phases a project goes through from its beginning to its completion. It provides a structured approach to plan, execute, and control the project effectively.

Phases of Project Life Cycle

1. Initiation

- This phase focuses on identifying the project need and defining clear objectives.
- It includes feasibility analysis and identifying key stakeholders.

2. Planning

- In this phase, scope, schedule, cost, and resources are clearly defined.
- Risk planning and proper scheduling are also carried out.

3. Execution

- The actual work of the project is performed in this phase.
- Teams are managed and resources are utilized to complete tasks.

4. Monitoring & Controlling

- Project progress and performance are continuously tracked.
- Necessary actions are taken to control time, cost, and quality.

5. Closure

- The project is completed and the final output is delivered.
- Documentation is done and formal approval is obtained.

Effect of Project Time on

1. Cost of Change

- In the early stages, changes are easy to implement and involve low cost.
- As the project progresses, changes become harder and require more effort.
- In later stages, changes are very expensive due to rework and delays.

2. Risk Level

- Risk is highest at the beginning due to lack of clarity.
- It reduces gradually as the project progresses and planning improves.

3. Stakeholder Influence

- Stakeholders have maximum influence in the early stages.
- They can impact key decisions like scope and objectives.
- Their influence reduces in later stages as the project becomes fixed.

5. Write a short note on: Role of Project Manager. #

Project Manager

A Project Manager is responsible for planning, executing, and controlling a project to achieve its objectives within time, cost, and scope constraints. They ensure that the project is completed successfully.

Role of a Project Manager

Role

1. Planning the Project

- Defines project objectives, scope, schedule, and budget to provide clear direction for the project

2. Organizing Resources

- Allocates manpower, materials, and other resources efficiently to ensure smooth project execution

3. Leading the Team

- Guides, motivates, and coordinates team members to maintain productivity and teamwork

4. Monitoring and Controlling

- Tracks project progress and ensures activities are completed as per the planned schedule

5. Managing Risks

- Identifies potential risks early and takes necessary actions to minimize their impact

6. Ensuring Quality

- Maintains quality standards to ensure the final deliverables meet expectations

7. Communication Management

- Ensures clear and effective communication among team members and stakeholders

2. Initiating Projects

6. Explain the stages of team development and growth. #

Team development is the process through which a group of individuals gradually becomes a well-coordinated and effective team. It usually moves through five stages as the team grows and matures.

1. Forming

- Team members come together and start understanding the project, but roles are still unclear and everyone is getting comfortable
- Members are usually polite and careful in their interactions

Example: A new project team meets for the first time and discusses basic project goals

2. Storming

- Differences in ideas and working styles lead to conflicts and disagreements among members
- This stage helps in bringing out issues and setting expectations

Example: Team members argue over which technology or approach should be used

3. Norming

- Conflicts start getting resolved and team members develop trust and better understanding
- Roles become clearer and teamwork improves

Example: The team agrees on a common approach and starts collaborating smoothly

4. Performing

- The team works efficiently with good coordination and focuses on achieving project goals
- Members are confident and can handle tasks with minimal supervision

Example: The team completes tasks on time with proper coordination and high productivity

5. Adjourning

- The project is completed and the team is formally disbanded
- Members may move on to new projects after reviewing their work

Example: After delivering the final product, the team wraps up and shifts to other projects

7. NPV-Based Project Selection Problems,

i. A project requires an initial investment of Rs. 30,000 in a project.
The project generates annual cash inflows of Rs. 10,000, Rs. 12,000 and Rs. 15,000 for 3 years respectively. If rate of discount is 12% per annum, calculate Net Present Value. Comment on whether the project should be accepted or rejected.

ii. ABC Industries has a potential project with an initial cost of Rs. 20,00,000. The capital budget allows to accept only one project. Using the NPV method, which project should be selected?

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Discount Rate	**9%**	**6%**	**15%**	**22%**

8. What are the numeric and non-numeric models of project selection? #

Project selection models are methods used to evaluate different project options and choose the most suitable one. Numeric models focus on financial aspects, while non-numeric models consider strategic and qualitative factors.

Numeric Models of Project Selection

1. **Payback Period**
   Measures how long it takes to recover the initial investment made in the project
2. **Net Present Value (NPV)**
   Calculates the present value of future cash flows to check if the project is profitable
3. **Internal Rate of Return (IRR)**
   Determines the rate of return at which the project's cost and returns become equal

Non-Numeric Models of Project Selection

1. **Sacred Cow Model**
   A project is selected based on the preference or decision of top management, even if it may not be financially justified
2. **Operating Necessity Model**
   A project is undertaken because it is essential for the day-to-day functioning or survival of the organization
3. **Competitive Necessity Model**
   A project is chosen to remain competitive in the market or to match competitors' actions
4. **Comparative Benefit Model**
   Projects are compared based on their overall benefits, and the one with the highest advantage is selected

9. Write a short note on: Project charter and Project sponsor. #

Project Charter

A Project Charter is a formal document that officially starts a project. It gives approval to begin the project and authorizes the project manager to use organizational resources. It is prepared during the initiation phase.

Contents of Project Charter

- Project name and brief description along with clear objectives.
- Scope of work, key stakeholders, and project manager details.
- Estimated budget, timeline, and major risks or assumptions.

Importance of Project Charter

- Clearly defines the purpose and direction of the project
- Provides official approval to start the project
- Acts as a reference document throughout the project

Project Sponsor

A Project Sponsor is a senior person in the organization who provides financial support and overall backing for the project. They provide necessary resources and ensure that the project aligns with business goals.

Role of Project Sponsor

- Approves the project and provides overall direction and support.
- Ensures availability of funds and required resources.
- Acts as a link between top management and the project team.

10. Write a short note on: Project portfolio process. #

Project Portfolio Process is a high-level management activity used to select, prioritize, and manage a group of projects (portfolio) so that they align with the organization's strategic goals.

Steps in Project Portfolio Process

1. Project Identification

- Possible projects are identified based on business needs, opportunities, or company goals

2. Project Evaluation

- Projects are evaluated using factors like cost, benefits, risk, and feasibility

3. Project Selection

- The most suitable projects are shortlisted based on their value and feasibility

4. Prioritization

- Selected projects are ranked based on importance, urgency, and business impact

5. Portfolio Balancing

- Projects are balanced to ensure proper use of resources and a mix of risk levels

6. Monitoring and Control

- Projects are regularly reviewed to track performance and make necessary adjustments

Example:
An IT company evaluating multiple project proposals and selecting only those that align with its strategic goals and available resources.

11. What are the advantages of an effective team and barriers to team effectiveness? #

Advantages of an Effective Team

- **Better performance and productivity**
  When team members work well together, tasks are completed faster and with better results.
- **Improved problem-solving**
  Different viewpoints help the team come up with more effective solutions.
- **Stronger communication**
  Clear communication helps avoid confusion and keeps everyone on the same page.
- **Higher motivation**
  A positive team environment keeps members motivated and willing to contribute.

Barriers to Team Effectiveness

- **Poor communication**
  Lack of proper communication can lead to misunderstandings and mistakes.
- **Conflicts and lack of trust**
  Frequent conflicts and low trust can affect teamwork and cooperation.
- **Unclear roles and responsibilities**
  When roles are not clearly defined, work may get delayed.
- **Lack of leadership**
  Without proper guidance, the team may lose direction and focus.

3. Project Planning and Scheduling

12. Problem on Project Network Diagram, Critical Path, Duration, Probabilities (PERT/CPM)

i. The R & D project has a list of tasks to be performed whose time estimates are given below:

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F	D, E	16	21	26
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I	G	1	3	5

a) Draw the project network.
b) Find the critical path.
c) Find the time required to complete the project and identify the critical activities.

13. Write a short note on: Work Breakdown Structure (WBS). #

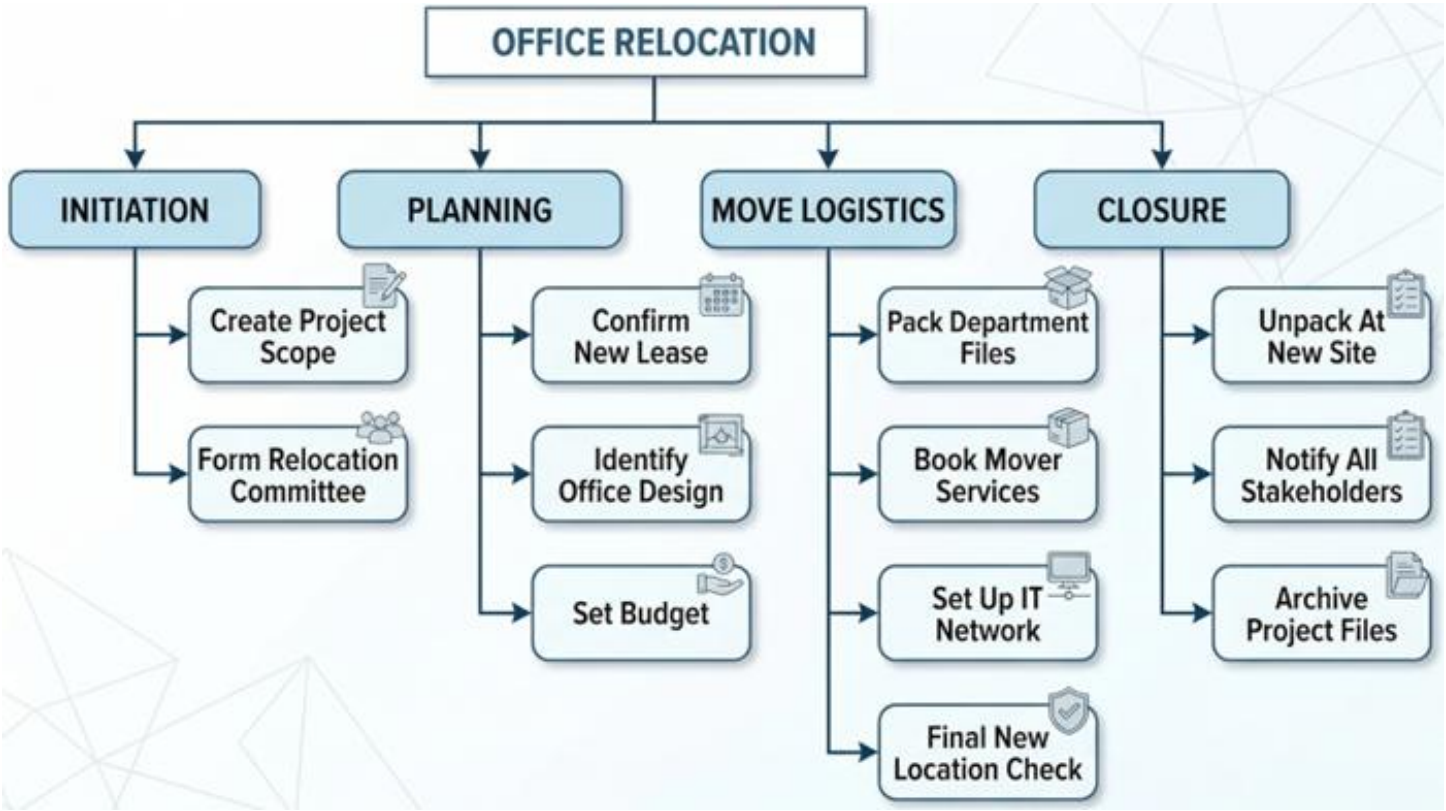
Work Breakdown Structure (WBS) is a project management tool used to divide a project into smaller, manageable parts so that the work can be planned and executed easily.

Explanation

- WBS breaks the project into smaller tasks in a step-by-step, hierarchical manner
- The lowest level is called a work package, where tasks are clearly defined and assigned
- It helps in better planning by improving estimation of time, cost, and resources
- It also ensures clarity of scope and helps in monitoring project progress

Example

An office relocation project is divided into phases like planning, moving, and closure, and further into smaller tasks like setting budget and booking movers.



14. Explain and differentiate between top-down and bottom-up budgeting approaches. #

Top-Down Budgeting

Top-down budgeting is a method where the budget is prepared by senior management and then distributed to different departments.

- Budget is decided at the top level based on overall organizational goals.
- Total project cost is estimated first and then divided among departments.
- Departments plan their activities within the given budget limits.

Bottom-Up Budgeting

Bottom-up budgeting is a method where departments prepare their own budgets and submit them for approval.

- Each department estimates its costs based on its tasks and activities.
- Individual budgets are combined to form the overall project budget.
- Final budget is reviewed and approved by top management.

Parameter	**Top-Down Budgeting**	**Bottom-Up Budgeting**
Approach	Based on overall organizational goals.	Based on department needs.
Flow	Budget flows from top management to departments.	Budget flows from departments to top management.
Estimation	Overall cost estimated first, then divided.	Detailed task-level estimates done first.
Involvement	Low employee involvement	High employee involvement
Accuracy	Less accurate due to lack of detailed input.	More accurate due to detailed estimation.
Time	Faster to prepare.	Takes more time to prepare.
Flexibility	Less flexible	More flexible
Focus	Focus on strategy.	Focus on practical needs and operations.
Control	Centralized control	Shared control
Example	Management fixing a Rs. 10 lakh budget for an IT project.	A development team estimating costs for each module and summing them up.

15. Explain GANTT chart with suitable example. #

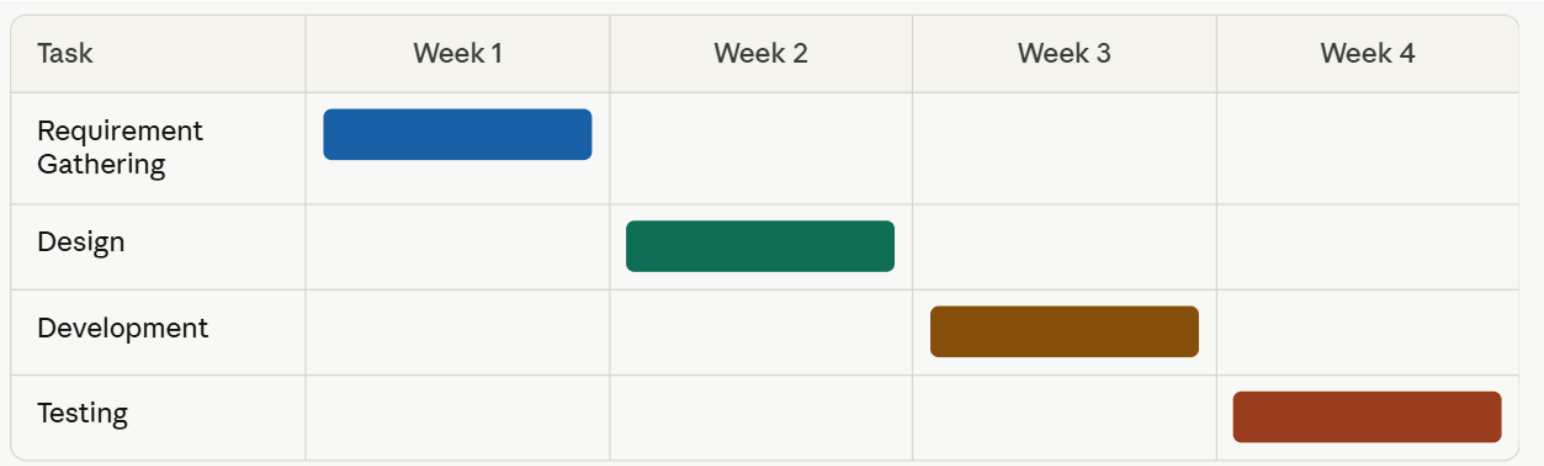
A Gantt chart is a project management tool used to show project tasks along a timeline. It shows when each task starts, how long it lasts, and when it is completed.

- It is a bar chart where tasks are listed on the vertical axis and time is shown on the horizontal axis
- Each task is shown using a horizontal bar indicating its start and finish time.
- It makes it easier to understand the sequence and duration of tasks.
- Overlapping bars show tasks that can be done at the same time.

Advantages

- Easy to understand and simple to create.
- Helps in tracking progress of tasks over time.
- Improves coordination by showing task timelines clearly.

Example



In this example, tasks like requirement gathering, design, development, and testing are scheduled across weeks, showing their duration and sequence clearly.

16. Write a short note on: Project Management Information System (PMIS). #

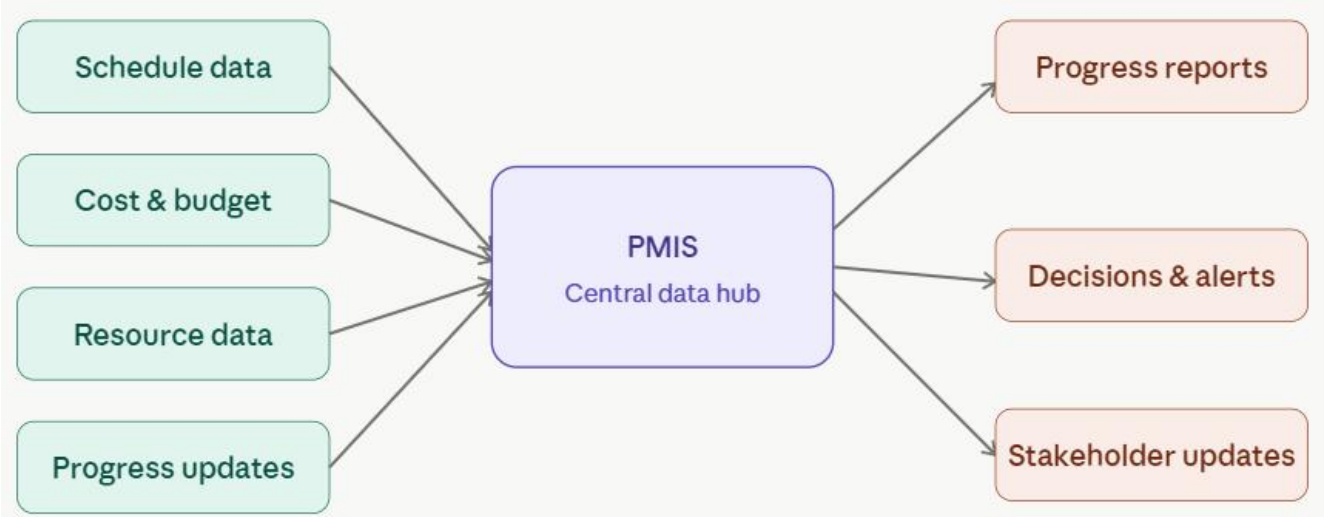
PMIS (Project Management Information System) is a system used to collect, store, process, and share project-related information. It supports planning, execution, and control of projects.

Explanation

- PMIS is a computer-based system that stores data like time, cost, resources, and progress.
- It helps in planning, scheduling, and tracking project activities.
- It provides updated information to support decision-making and communication.

Functions of PMIS

- Collects and stores project data.
- Supports planning and scheduling.
- Tracks performance and progress.



17. Describe various project cost estimation and scheduling techniques. #

Cost Estimation Techniques

Analogous Estimation

- Uses data from similar past projects to estimate cost quickly, especially in early stages.
- It is simple and fast but less accurate due to reliance on past data.

Bottom-Up Estimation

- Cost is estimated for individual tasks and then combined to get total project cost.
- It is more accurate but time-consuming as each activity is analyzed in detail.

Parametric Estimation

- Uses mathematical models and parameters (like cost per unit) to estimate cost.
- It is reliable when accurate data is available for calculations.

Scheduling Techniques

Gantt Chart

- Uses bar charts to show tasks along a timeline, helping in planning and tracking progress.
- It is easy to understand and widely used for scheduling project activities.

CPM (Critical Path Method)

- Identifies the longest sequence of tasks that determines the minimum project duration.
- Tasks on the critical path cannot be delayed without affecting the entire project.

PERT (Program Evaluation Review Technique)

- Uses different time estimates to handle uncertainty in task durations.
- It is useful for projects where activity durations are difficult to predict accurately.

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30. Explain multicultural and virtual projects. #

Asked once:

1. Project Management Foundation

1. Explain conflicts in Project Management. Why are negotiations important in Project Management?

Conflict in project management means disagreements between team members or stakeholders while working on a project. It is common because people work together with different ideas and expectations.

Causes / Types of Conflicts

- **Resource conflicts:** Occur when limited resources like time, budget, or manpower are needed by multiple tasks at the same time.
- **Schedule conflicts:** Arise when there are differences in deadlines or when delays in one task affect others.
- **Technical conflicts:** Happen when team members disagree on methods, tools, or ways of solving a problem.
- **Priority conflicts:** Different stakeholders may focus on different priorities such as cost, time, or quality.

Importance of Negotiation

- **Helps resolve conflicts smoothly:** Allows both sides to reach a solution that is acceptable to everyone.
- **Ensures better use of resources:** Helps in fairly allocating limited resources without affecting project progress.
- **Improves stakeholder satisfaction:** Aligns expectations between team members, clients, and management.
- **Leads to better decisions:** Encourages discussion and results in more practical and balanced outcomes.
- **Useful in dealing with vendors:** Helps in setting clear and beneficial terms with suppliers or external parties.

2. Describe the typical and atypical project life cycles, highlighting the stages in the stage-gate process.

A project life cycle defines the sequence of phases a project goes through from start to completion. Depending on the nature of the project, the life cycle can be typical (predictable) or atypical (flexible).

1. Typical Project Life Cycle

A typical life cycle is linear and structured, where phases are clearly defined and follow a fixed sequence.

Phases:

- **Initiation:** The project idea is identified and feasibility is checked.
- **Planning:** Scope, schedule, cost, and resources are defined.
- **Execution:** Actual work of the project is carried out
- **Monitoring & Controlling:** Progress is tracked and necessary corrections are made.
- **Closure:** The final output is delivered and project is completed.

Suitable for projects with clear requirements (e.g., construction projects)

2. Atypical Project Life Cycle

An atypical life cycle is flexible and iterative, where phases may overlap or repeat based on project needs.

Key Characteristics

- Phases are not strictly sequential and may overlap or run in parallel.
- Requirements may change during the project.
- Continuous feedback and improvements are involved.

Suitable for projects with uncertain or evolving requirements (e.g., software development using Agile)

Stage-Gate Process

The stage-gate process divides the project into stages separated by decision points called gates, where progress is reviewed.

Stages

- **Idea Stage:** The initial concept is generated and evaluated.
- **Development Stage:** Detailed planning and design are carried out.
- **Testing Stage:** The product or solution is tested and validated.
- **Launch Stage:** The final product is delivered or rolled out.

2. Initiating Projects

3. Explain the significance of IRR method in project selection. #

3. Project Planning and Scheduling

4. What is concurrent engineering?

4. Planning Projects

5. **Who are the stakeholders in projects? Why is communication the most important part of a project manager's job?**

6. Explain the project buffer. #

7. **What is the difference between resource loading and resource levelling?** #

8. **Explain the risk breakdown structure.** #

5. Project Executing, Monitoring & Controlling

9. **Draw an Earned Value chart. Describe the three variances of it and explain their significance.**

10. What are the advantages and risks of outsourcing in project management?

11. What is the difference between contracting and outsourcing?

12. What is the importance of vendor documents? How should vendor documents be preserved?

13. **Why are meetings useful in project monitoring? What rules should be followed to maximize the effectiveness of meetings?**

6. Project Leadership, Ethics and Closure

14. Explain the project management template with a sample template sheet.

~ *AJ*