PMM Final PYQ

b) What do you understand by a dummy? What are its uses

What Do You Understand by a Dummy?

A **dummy** in project management is a **symbolic activity** used in network diagrams (especially in **Activity-on-Arrow (AOA)** diagrams).
It:

- **Does not require any time or resources**
- Is used to show **dependency or relationship** between activities
- Is typically represented by a **dashed arrow**

Uses of a Dummy

1. **To Show Logical Relationships:**
   Helps in clearly defining the sequence and dependencies between tasks when no actual task exists.
2. **To Avoid Confusion in the Network:**
   Prevents overlap or misinterpretation when two activities start and end at the same events but have different dependencies.
3. **To Maintain Proper Structure:**
   Ensures every activity in a network has a **unique representation**, which is a requirement in AOA diagrams.
4. **To Clarify Precedence Conditions:**
   Helps in accurately modeling which activity must precede another.

c) What is the suitability of PERT for research Projects?

1. Handles Uncertainty Well

- Research projects often involve **uncertain or unpredictable task durations**.
- PERT uses **three time estimates** (optimistic, most likely, and pessimistic) to calculate expected durations, making it ideal for such environments.

2. Focuses on Planning and Scheduling

- PERT helps in **breaking down complex research tasks** into manageable activities and sequences, ensuring better organization.

3. Identifies Critical Path

- It highlights the **critical path**, allowing researchers to focus on key activities that directly affect the project timeline.

4. Aids in Resource Allocation

- Helps allocate **time and resources efficiently**, especially when multiple activities can run in parallel.

5. Useful in R&D Projects

- Commonly used in **research and development** (R&D) projects where activities are **non-repetitive and unique**, just like in academic or scientific research.

What is the Change Management Plan?

Ans=>

A **Change Management Plan** is a structured approach in project management that **outlines how changes to the project will be managed, documented, and communicated** throughout the project lifecycle. It ensures that **changes are handled in a controlled, consistent, and effective way**, minimizing disruption and ensuring alignment with project goals.

Purpose of a Change Management Plan

- To ensure that changes are handled in a **controlled and systematic** way
- To **minimize disruptions** to the project
- To maintain the project's **scope, schedule, cost, and quality** objectives
- To ensure **stakeholder awareness and communication** regarding changes

4Marks Questions

Differentiate between 'forward planning', 'backward planning', and 'combined

- **planning'.**
  Forward Planning: Planning that begins from the **present or starting point** and moves **step-by-step into the future**, determining actions based on current conditions.
- **Backward Planning**: Planning that starts from the **desired end goal** or deadline and works **backward** to figure out what steps are needed to reach that goal on time.
- **Combined Planning**: A **hybrid approach** that uses both forward and backward planning to achieve **realistic goals** while maintaining **flexibility** and **efficiency**.

✅ **Tabular Comparison (Grouped for Easy Memory)**

Feature	Forward Planning	Backward Planning	Combined Planning
1. Approach Direction	Starts from **beginning** to future	Starts from **goal** and moves backward	Uses **both forward and backward** approaches
2. Goal Focus	Goal is **flexible or evolving**	Goal is **fixed and clear**	Goal is **clear but adaptable**
3. Time Orientation	Emphasizes **current to future timeline**	Focuses on **deadline or due date**	Balances **timeline and deadline**
4. Flexibility	High flexibility	Low flexibility	Moderate flexibility

Definition
Direction of movement
Flexibility
Risk apperance
Deadline

Feature	Forward Planning	Backward Planning	Combined Planning
5. Resource Usage	May cause **resource inefficiency**	Aims for **optimal resource use**	Promotes **balanced resource planning**
6. Risk Handling	Risks may appear **later**	Risks identified **early**	Risks assessed **throughout**
7. Suitability	Good for **open-ended or exploratory** projects	Good for **goal-bound or fixed-schedule** tasks	Suitable for **complex or large-scale** projects
8. Planning Control	Controlled **as the project progresses**	Controlled **by the final goal**	Controlled by **both timeline and objectives**
9. Example Use	New product idea development	Conference or event planning	Engineering or construction projects
10. Decision Making	Made **gradually** as things unfold	Made **in advance** to meet goals	Made with **flexibility and control**

Q4. Discuss various rules for providing dummies in a network ,What are Redundant dummies

In **network diagrams**, especially **Activity-on-Arrow (AOA)** diagrams used in **PERT**, **dummy activities** are introduced to show correct relationships and dependencies **without consuming time or resources**.

🔧 **Rules for Providing Dummies:**

✅ **1. Avoid Two Activities with Same Start and End Nodes**

- If two activities have the same start and end events, you must insert a **dummy activity** to maintain uniqueness.

✅ **2. Maintain Proper Precedence Relationships**

- If activity B depends on activity A and activity C depends only on activity A — but share nodes — you may need to introduce a **dummy** to show correct dependency.

✅ **3. Dummies Consume No Time or Resources**

- A dummy must always have **zero duration** and **should not use any resources**.

✅ **4. Use Dotted Arrows to Show Dummies**

- Always represent dummy activities with a **dashed or dotted arrow** to distinguish them from real tasks.

✅ **5. Avoid Misleading Dependencies**

- Use dummies to **prevent confusion** about which activity depends on which, especially when multiple activities emerge from a node.

✅ 6. Unique Representation of Activities

- Every activity must have **unique identification** in terms of its start and end events — dummies help achieve this.

📌 Redundant Dummies

A Redundant Dummy is A dummy activity that is not necessary. It doesn't serve any real logical purpose. It can be removed without affecting the logic or flow of the network.

12marks

Explain the term Updating a project. Why is it necessary? What data is necessary for updating ?Discuss when updating should be performed and what methods are adopted for updating the project.

What Data Is Necessary for Updating?

Accurate and relevant data is essential to form a clear picture of the project's status. Key data points include:

- **Project Timeline & Milestones:** Current schedule, achieved milestones, upcoming deadlines, and the impact of delays.
- **Task Progress & Status:** Detailed progress of individual tasks, completion percentages, and factors causing delays or accelerating progress.
- **Resource Allocation:** Information on resource usage, availability, and any changes required in staffing or material procurement.
- **Budget & Financial Data:** Actual versus planned expenditures, cost variances, and updated forecasts.
- **Risk & Issue Logs:** New risks identified, progress on mitigating actions for existing risks, and issues that have emerged.
- **Change Requests:** Any modifications to project scope or strategy, along with approved changes and their implications.
- **Quality Metrics:** Data concerning deliverable quality, performance metrics, and any deviations from expected standards.
- **Stakeholder Feedback:** Information gathered from meetings, surveys, or direct communications that may influence project direction.

When Should Updating Be Performed?

Updating a project should be viewed as a continuous and iterative process. Common intervals and triggers include:

- **Scheduled Reviews:** Regularly planned intervals—such as weekly status meetings or monthly reviews—ensure systematic re-evaluation of progress.
- **Milestone Completions:** Upon reaching major milestones or phase completions, an update helps in understanding achievements and planning subsequent actions.

- **Significant Change Events:** When unexpected events occur (e.g., scope changes, unanticipated risks, or market shifts), immediate updates are necessary to adapt the plan accordingly.
- **Agile Iterations:** In agile environments, daily stand-ups and sprint reviews naturally incorporate updates into the workflow.

Methods for Updating the Project

A variety of methods ensure that updating is systematic, transparent, and effective:

- **Regular Meetings & Reviews:** Scheduled team meetings, milestone evaluations, and stakeholder briefings are traditional and effective methods for sharing updates and gathering new inputs.
- **Dashboard & Project Management Software:** Tools such as Microsoft Project, Asana, or Jira provide real-time data visualization and automated progress tracking, making it easier to identify deviations promptly.
- **Status Reports:** Comprehensive reports, often generated weekly or monthly, encapsulate the current state of the project, highlighting achievements, challenges, and areas needing attention.
- **Earned Value Management (EVM):** This technique compares planned work with actual work performed, offering a quantitative measure of project performance relative to schedule and cost baselines.
- **Change Control Procedures:** Formal mechanisms—often involving change control boards—evaluate any proposed changes systematically, update official project documentation, and realign strategies based on approved modifications.
- **Collaborative Platforms:** Utilizing cloud-based tools permits collaborative updates, ensuring that every team member contributes to a real-time, constantly evolving project narrative.

What is optimum cost of a project? Discuss the steps for achieving optimum duration and optimum cost.

✅ What is Optimum Cost of a Project?

Optimum cost is the **minimum total cost** at which a project can be completed **within an acceptable time frame**, balancing **direct and indirect costs**. It represents the **best trade-off between time and money**—achieving the **shortest possible duration** without unnecessary

✅ Steps to Achieve Optimum Duration and Optimum Cost:

Step	Details
1. Prepare a Network Diagram	Use **CPM or PERT** to represent the activities and dependencies.

Step	Details
2. Determine Normal and Crash Times and Costs	For each activity, identify: • **Normal time & cost** • **Crash time & cost** • **Cost slope = (Crash Cost – Normal Cost) / (Crash Time – Normal Time)**
3. Identify the Critical Path	Find the **longest duration path** in the network—this controls the project duration.
4. Crash the Critical Path Activities	Gradually reduce the duration of activities on the critical path **with the lowest cost slope**.
5. Monitor Cost Trade-offs	Each time an activity is crashed: • **Direct cost increases** • **Indirect cost decreases** Calculate **total cost = direct + indirect**.
6. Stop at Optimum Point	Stop crashing when the **total cost is minimum**. Further crashing would increase total cost.
7. Recalculate the Critical Path if Needed	New critical paths may emerge after crashing; always update your analysis.
8. Finalize Optimum Duration and Cost	The point where total cost is lowest gives the **optimum project duration and cost**.