Instructions to the Candidates:

- The question paper Consists of Four Parts.
- Part –A consists of one or two sentence answer type questions meant to test your conceptual understanding of the subject taught to you. Each Question carries 1 or 2 Marks. This section is compulsory. The total weightage for this section is 20 Marks.
- Part B and Part C Consists of five marks questions and ten marks questions to test your ability to get into the subject in detail. Part D Consists of questions on the basis of a case study- this tests your ability to apply the knowledge to real world problem situations and scenario's.
- Part A has a weight age of 20 marks and is compulsory. Part B & C Consists of questions with allocation of 5 marks and 10 marks each with a total allocation of 30 & 30 marks respectively. The total marks for section B & C Put together is 50 marks. Part D is a case study problem which has two questions answering any one of the two is compulsory. The case study carries 20 Marks.

Q.No. 1	Part A (Answer in one or two sentences)	**Marks**
1.	Mention any two methods for Project Cost Estimation.	**01**
2.	What is the Cost Performance Index (CPI), and what does it tell the project manager about the project's financial performance?	**01**
3.	Imagine your engineering team is building a new pedestrian bridge. During the project, the team regularly inspects the materials, checks the welds, and performs load tests to confirm that all parts of the bridge meet the design specifications before the public can use it. Which quality management process does this best describe?	**01**
4.	A construction project manager notices that over the last month, 80% of the defects reported in the completed work have come from just two sources: incorrect wall measurements and improperly installed plumbing fixtures. To prioritize fixing the most serious problems first, which quality management tool should the manager use to display this defect data?	**01**
5.	A project manager needs to hire a company to complete a very specific, detailed task that has a clear final outcome, but the manager wants to control the total cost and keep it fixed. Which type of procurement contract is best to use in this situation?	**01**
6.	A project manager needs to hire a company to complete a very specific, detailed task that has a clear final outcome, but the manager wants to control the total cost and keep it fixed. Which type of procurement contract is best to use in this situation?	**01**
7.	During the administering of a contract for a specialized construction firm, what is the primary purpose of conducting regular performance reviews and inspections?	**01**
8.	According to the Power/Interest Grid, if a stakeholder group has high influence over project decisions and a high level of vested interest in the project's outcome, what is the primary engagement strategy a Project Manager should implement?	**01**
9.	A conflict arises during a project to update the school cafeteria menu: some students want only fast food options, but the school principal insists on	**01**

	healthier choices. You are the project manager. What is the most effective action to manage stakeholder expectations and resolve this conflict?	
10.	A construction project suddenly faces a delay because the government unexpectedly changed a key environmental regulation. Which category of project risk best describes this situation?	01
11.	What is a payoff table used for in decision analysis?	01
12.	Name one method used to evaluate decisions under uncertainty.	01
13.	Name one tool or technique used in cost estimation.	01
14.	Name one tool used in quality control.	01
15.	Name one type of contract used in procurement management.	01
16.	Which document outlines identified risks and planned responses?	01
17.	What is the purpose of quality planning in a project?	01
18.	Which document defines roles, responsibilities, and reporting relationships in a project?	01
19.	What is the primary goal of managing project teams?	01
20.	What is the main purpose of qualitative risk analysis?	01
	Part B (Short Answers) (Answer any six from the following eight questions) **Each question carries 5 Marks.**	**30**
3	An engineering firm is bidding on a new, highly complex deep-sea drilling project with little historical data. The project is currently in the initial concept phase. Which cost estimation methodology—Analogous, Parametric, or Three-Point (PERT)—is most appropriate for this early-stage estimate, and why? Explain your choice in terms of its accuracy versus speed/data requirements.	05
4	Explain the fundamental difference between Quality Assurance (QA) and Quality Control (QC) as defined by the Project Management Body of Knowledge (PMBOK). Provide one example of a technique or process used in each of these two activities.	05
5	A software development project is nearing a critical release deadline, and a major stakeholder from the marketing department has been consistently sending late-night emails with non-urgent feature requests, causing stress and confusion for the development team. Describe a specific strategy the Project Manager should apply immediately to address this communication barrier and manage the stakeholder's expectations, and explain the evaluation metric that would be used to assess the effectiveness of this strategy.	05
6	Regarding a Responsibility Assignment Matrix (RAM) using the RACI model, explain the primary difference between the Accountable (A) role and the Responsible (R) role for a specific project task.	05
7	A construction project procurement manager is preparing a Request for Proposal (RFP) for a complex steel fabrication job. Analyze and explain two essential purposes of the Statement of Work (SOW) within this RFP package. Furthermore, identify one significant procurement risk the buyer faces when using a poorly defined SOW and describe a contractual method to mitigate that specific risk.	05

8	Explain the difference between risk and uncertainty in the context of project management, and briefly describe the purpose of the Risk Register in managing these concepts.	05
9	Explain how the concept of expected monetary value (EMV) is used in decision analysis to evaluate alternatives under uncertainty.	05
10	What specific feature of a Decision Structure Matrix enables early detection of decision-making delays in cross-functional projects?	05

	Part C (Detailed answers expected) **(Answer any three full questions)** **Each question carries 10 marks**	**30**
11	Explain the key processes involved in Project Cost Management as defined by the PMBOK Guide. How do these processes contribute to effective cost control throughout the project lifecycle?	10
12	Discuss the importance of Project Communication Management in ensuring project success. Describe the key processes involved and explain how effective communication planning and execution can influence stakeholder engagement and project outcomes.	10
13.	Define Project Quality Management and explain its key processes as outlined in the PMBOK Guide. How do these processes ensure that project deliverables meet stakeholder expectations and organizational standards?	10
14.	What is Project Stakeholder Management, and why is it critical to project success? Describe the key processes involved and explain how stakeholder engagement strategies can influence project outcomes.	10
15.	**Problem:**A company must decide whether to launch a new product or improve an existing one. The decision depends on market response and potential profit. The options are: **Option A: Launch New Product.** o If the market responds well (probability = 0.6), profit = ₹10 lakhs o If the market responds poorly (probability = 0.4), loss = ₹4 lakhs • **Option B: Improve Existing Product** o If the market responds well (probability = 0.8), profit = ₹6 lakhs o If the market responds poorly (probability = 0.2), loss = ₹1 lakh Which option should the company choose?	10

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A farmer must choose one of three crops to plant for the upcoming season. The profit depends on the weather, which could be **Dry**, **Normal**, or **Wet**. The estimated profits (in ₹ lakhs) under each weather condition are:

Crop	Dry	Normal	Wet
Wheat	2	5	3
Rice	1	4	6
Maize	3	3	2

Assume the probabilities of Dry, Normal, and Wet weather are 0.2, 0.5, and 0.3 respectively. Identify the correct desion using the following decision criteria.

1. Maximax Criterion (Optimistic Approach)
2. Maximin Criterion (Pessimistic Approach)
3. Minimax Regret Criterion
4. Expected Monetary Value (EMV).

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PART-D (CASE STUDY)
ANSWER ANY ONE

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Case Study: The Orion Smart Hospital Project

Background: Orion Health Systems has embarked on building a state-of-the-art smart hospital in Bengaluru, India. The project includes advanced medical imaging systems, robotic surgical units, and integrated patient monitoring platforms. With a budget of ₹250 crore and a timeline of 24 months, the project team must procure high-tech equipment and services from global vendors.

Challenge:

The procurement team must select vendors for three critical components:

1. MRI and CT imaging systems
2. Robotic surgical platforms
3. Cloud-based patient data management systems

Each component requires a different procurement strategy due to varying market maturity, vendor reliability, and integration complexity. The team must also negotiate favorable terms while ensuring compliance with regulatory standards and long-term service support.

Questions for Analysis

Vendor Evaluation Matrix

Question:

Design a weighted scoring model to evaluate potential vendors for the MRI and CT imaging systems. What criteria would you include, and how would you assign weights based on Orion's strategic priorities?

Hint: Consider factors like cost, technical compatibility, service history, warranty terms, and regulatory compliance.

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	2. Negotiation Strategy Development. **Question:** Orion is negotiating with a leading supplier of robotic surgical platforms. The supplier offers high-end technology but demands upfront payment and limited post-installation support. What negotiation tactics should Orion use to secure better terms without jeopardizing the relationship? *Hint: Explore win-win strategies, risk-sharing models, and leverage points such as long-term partnerships or bundled services.* **3. Make-or-Buy Analysis** **Question:** For the cloud-based patient data management system, Orion is considering building a custom solution in-house versus outsourcing to a specialized vendor. Conduct a make-or-buy analysis outlining the key cost, time, and strategic considerations. *Hint: Include factors like internal capability, scalability, data security, and integration with existing systems.* **4. Contract Type Selection** **Question:** Which contract type (Fixed Price, Cost Reimbursable, or Time & Materials) would be most appropriate for each of the three procurement categories? Justify your choices based on risk allocation, scope clarity, and vendor relationship dynamics. *Hint: Consider the complexity and uncertainty of each component.*	
18	**Case Study: The Solaris Wind Farm Expansion** **Background:** Solaris Energy Pvt. Ltd. is expanding its wind farm operations in Tamil Nadu to meet rising energy demands and government sustainability targets. The ₹400 crore project involves installing 50 new wind turbines across coastal terrain, integrating smart grid technology, and upgrading transmission infrastructure. The project timeline is 30 months, and it involves multiple stakeholders including government agencies, international suppliers, and local contractors. **Challenge:** The project team must proactively identify and mitigate risks across technical, environmental, financial, and stakeholder domains. Recent delays in similar projects due to regulatory bottlenecks, extreme weather, and supplier insolvency have raised concerns. Solaris wants to embed a robust risk management framework from the outset. **Questions for Analysis** **1. Risk Identification Framework.** **Question:** Design a structured approach for identifying risks in the Solaris Wind Farm Expansion project. What tools and techniques would you use, and how would you ensure stakeholder participation in the process? *Hint: Consider methods like brainstorming, SWOT analysis, expert interviews, and risk checklists.*	

	2. Risk Categorization and Prioritization **Question:** List and categorize at least six potential risks (technical, environmental, financial, stakeholder-related) for this project. Use a probability-impact matrix to prioritize them and explain your rationale. *Hint: Include risks like monsoon disruptions, grid integration failures, supplier delays, and land acquisition issues.* **3. Mitigation Strategy Design** **Question:** Choose two high-priority risks from your matrix and propose detailed mitigation strategies. How would you monitor the effectiveness of these strategies throughout the project lifecycle? *Hint: Explore contingency planning, contractual safeguards, insurance, and early warning systems.* **4. Risk Ownership and Communication** **Question:** How should Solaris assign risk ownership and ensure transparent communication across teams and stakeholders? Propose a risk register format and escalation protocol for critical risks. *Hint: Include fields like risk owner, mitigation status, review frequency, and escalation triggers.*	