7.1 Unit I Questions

- **Short Answer:**
  1. Define Software Process Maturity.
  2. List the five levels of CMM.
  3. Define KPA (Key Process Area).
  4. Difference between PSP and TSP. [6]
- **Long Answer:**
  1. Explain the Capability Maturity Model (CMM) in detail with a neat diagram. Describe the KPAs at each level. [6]
  2. Differentiate between CMM and CMMI. Explain the staged and continuous representations of CMMI. [7]
  3. Discuss the "Principles of Software Process Change." What are the phases of software process assessment? [7]

7.2 Unit II Questions

- **Short Answer:**
  1. Define Software Economics. [7]
  2. List the four phases of the modern lifecycle.
  3. What is the "Diseconomy of Scale"?
- **Long Answer:**
  1. Explain "Conventional Software Management" (Waterfall) and list its drawbacks. [7]
  2. Discuss the five parameters for "Improving Software Economics" in detail. [7]
  3. Compare and contrast Conventional Software Engineering vs. Modern Software Engineering. [7]
  4. Explain the objectives and artifacts of the Inception, Elaboration, Construction, and Transition phases. [6]

7.3 Unit III Questions

- **Short Answer:**
  1. What is a Milestone?
  2. Define WBS.
  3. List the seven workflows.
- **Long Answer:**
  1. Explain the "Software Process Workflows" (Requirements, Design, etc.) and how they interact across phases. [11]
  2. Describe the Major Milestones (LCO, LCA, IOC) and Minor Milestones. Why are they critical for synchronization? [12]
  3. Explain the "Cost and Schedule Estimating Process" and the concept of Pragmatic Planning. [6]

7.4 Unit IV Questions

- **Short Answer:**
  1. List the Seven Core Metrics. [11]
  2. What is Round-Trip Engineering?
  3. Define "Change Traffic."
- **Long Answer:**
  1. What are the "Seven Core Metrics"? Explain each in detail with examples of how they are used for project control. [9]
  2. Discuss the evolution of "Project Organizations." Compare Line-of-Business vs. Project organizations. [11]
  3. Explain "Process Automation" and "Project Control and Process Instrumentation." [11]

7.5 Unit V Questions

- **Short Answer:**
  1. What is CCPDS-R?
  2. Define "Modern Process Transition."
- **Long Answer:**
  1. Analyze the CCPDS-R Case Study. How did it demonstrate the effectiveness of modern management practices? [6]
  2. Discuss "Next-Generation Software Economics" and "Modern Project Profiles." [11]
  3. Explain the future practices in software project management. [6]

8.1 The "Gunshot" Strategy

Pedagogical experts and faculty reviews of previous papers suggest a "Gunshot" list of topics that appear with >80% frequency.[8] Students short on time should prioritize these:

1. **CMM Levels (Unit I):** Use the staircase diagram.
2. **Improving Software Economics (Unit II):** The 5 parameters.
3. **Lifecycle Phases (Unit II):** The 4 phases (Inception to Transition).
4. **The 7 Core Metrics (Unit IV):** Memorize the list.
5. **CCPDS-R Case Study (Unit V).**

8.2 Answering Strategy

- **Diagrams are Mandatory:** Even if not explicitly asked, draw diagrams.
  - *Unit I:* CMM Staircase.
  - *Unit II:* The "Hump" chart showing cost/effort over phases.
  - *Unit III:* The WBS tree structure.
- **Comparison Tables:** Use tables for "Old Way vs. New Way" or "CMM vs. CMMI" questions. Evaluators prefer structured data over paragraphs.
- **Definitions:** Start every answer with a formal definition of the key term (e.g., "Software Economics is defined as...").