

Question	%
Q1	35
Q2	25
Q3A or Q3B	20
Q4A or Q4B	20
Total	100

Answer questions: **Q1, Q2**, one of **Q3A** or **Q3B**, and one of **Q4A** or **Q4B**!

CLOSED BOOK AND NOTES – One 8 ½ x 11 aid sheet allowed.

Please write legibly – unreadable answers are not answers.

THE FOLLOWING QUESTION (Q1) IS MANDATORY AND WORTH 35%.

Q1: Your senior management, having heard of the Capability Maturity Model (CMM) at an executive lunch, have decided to investigate achieving some CMM level, but their understanding is limited. You are to prepare an estimation of the R.O.I. (Return On Investment) of achieving any **ONE** of the levels (other than level 1), assuming all the lower levels have been already achieved. Pick one of the levels (not level 1) and describe a strategy of implementation, the possible expenditures and effort (initial and ongoing), potential risks, and expected returns (i.e., benefits).

Capability Maturity Model Levels

1. **Initial** – ad hoc.
2. **Repeatable** – basic management processes: SCM, SQA, & requirements management.
3. **Defined** – management and engineering processes documented, standardized, integrated, and actually used.
4. **Managed** – Software quality and process management measured and monitored and controlled using measurements.
5. **Optimizing** – Continuous process improvement is enabled by quantitative feedback from the process and from piloting innovative ideas and technologies.

THE FOLLOWING QUESTION (Q2) IS MANDATORY AND WORTH 25%.

Q2: Describe how your **simon** project team is addressing project process problems that are addressed by any **two** of Stenning's six principles. The discussion should describe the perceived problems, their possible impact on the project, and the measures that your team is taking to avoid or mitigate them.

Stenning's Principles of Project Hygiene

1. Everybody involved in the project should know the objectives of what he or she is doing.
2. Achievement of the overall project objectives should follow immediately from achievement of all individual objectives.
3. Both individual objectives and overall project objectives should be realistic.
4. There should be a known method for addressing each individual object.
5. Changes should be controlled, visible and of known scope.
6. Both people and products should be insulated from the effects of changes that are not (currently) of relevance.

Continued over-leaf!

ANSWER EITHER Q3A OR Q3B, BUT NOT BOTH – WORTH 20%.

Q3A: Pick a non-developer role (e.g., senior management, customer, support, end-user, sales), and identify from that role’s perspective at least three of the most important attributes of **good** software. Justify your choice of those attributes and explain their importance to your chosen role.

Q3B: You, as a senior technical member of a project team, are asked to make two presentations of your project, one to a collection of senior and project management, and another to a collection of customers and end-users. Your manager suggests that to save time, the same presentation materials can be used for both. Do you agree? If so, why and what would you present? If not, explain the differences between the two presentations.

ANSWER EITHER Q4A OR Q4B, BUT NOT BOTH – WORTH 20%.

Q4A: The following is the table of the impact of project characteristics on Mantei’s generic team organizations.

Project Characteristic	Team Type		
	Democratic Decentralized (DD)	Controlled Decentralized (CD)	Controlled Centralized (CC)
Difficulty	high	low	low
Size	small	large	large
Team lifetime	long	short	short
Modularity	low	high	high
Reliability	high	high	low
Deadlines	lax	lax	strict
Sociability	high	low	low

Pick any **three** of the above seven rows and discuss the chosen rows’ entries. For each chosen characteristic (i.e., row) discuss why or why not the team types are effective or ineffective at meeting the characteristic’s demands.

Q4B: Two different project teams are competing for a contract. Team A, which consists of six people, completes the first phase in five months, whereas the four person team B takes six months. Which team would you initially choose for the next phase? Why would you choose that team? Why were they able to achieve the presumed superior result? What additional factors should you consider before making your final choice?