

--Question Starting--

24. Consider a layered OSI model and a network employing TCP/IP stack. Which of the following are true regarding the functions performed at different layers?

- I. The Data Link layer manages framing and error detection.
- II. The Network layer handles routing and logical addressing.
- III. The Transport layer ensures end-to-end flow and error control.
- IV. The Application layer is responsible for data encryption.

Select all that apply:

- (1) I, II, and III only
- (2) I and IV only
- (3) II and III only
- (4) All of the above

Answer Key: 1

Solution:

Statement I (Correct): Data Link layer manages framing, MAC addressing, and error detection.

Statement II (Correct): Network layer handles routing, logical addressing (IP addresses), and packet forwarding.

Statement III (Correct): Transport layer ensures reliable data transfer with flow and error control, especially in TCP.

Statement IV (Incorrect): While encryption can be implemented at various layers, it is primarily an application or presentation layer function, not a core function of the Application layer in the OSI model.

Hence, the correct answer is Option (1).

--Question Starting--

25. A software project has the following identified risks:

- Requirements ambiguity
- Technology unfamiliarity
- Tight deadlines

Which of the following are appropriate risk mitigation strategies?

- I. Conduct thorough requirements analysis before development
- II. Invest in training and prototyping for unfamiliar technologies
- III. Prioritize features and adjust scope to meet deadlines
- IV. Ignore risks and proceed with initial plans

Choose the correct options:

- (1) I, II, and III only
- (2) I and IV only
- (3) II and III only
- (4) All of the above

Answer Key: 1

Solution:

Statement I (Correct): Clarifying requirements reduces ambiguity, minimizing risk.

Statement II (Correct): Training and prototyping reduce technology risk.

Statement III (Correct): Prioritization and scope adjustment help in meeting deadlines.

Statement IV (Incorrect): Ignoring risks increases project failure likelihood.

Hence, the correct answer is Option (1).

--Question Starting--

26. In the context of software quality factors, which of the following are considered primary McCall's quality factors?

- I. Correctness
- II. Flexibility
- III. Maintainability
- IV. Usability

Choose the correct options:

- (1) I, II, and III only
- (2) I, III, and IV only
- (3) II and IV only
- (4) All of the above

Answer Key: 2

Solution:

Statement I (Correct): Correctness ensures the software meets specifications.

Statement II (Incorrect): Flexibility is a desirable attribute but not explicitly listed as a primary McCall's factor.

Statement III (Correct): Maintainability is a core McCall's factor, focusing on ease of modification.

Statement IV (Correct): Usability is also a key factor in software quality, emphasizing user satisfaction.

Hence, the correct answer is Option (2).