



Date: 15.11.2025

Time: 1.30 pm – 3.30 pm

INSTRUCTIONS TO CANDIDATES

- **First Question is compulsory** and select **any 03** questions from question 02 - 06 to answer.
- All questions carry equal marks.
- This paper contains **six (06)** questions in **three (03)** pages.
- Paper duration is **two hours**.

(Q01)

(25 marks)

Below case study shows a development cycle of a software company.

Zintech Software Solutions is a pioneering software company in Sri Lanka and the creator of the *MHealth* software application, currently deployed at *Medihelp Hospital*. The company follows a modern agile software development methodology widely adopted across the IT industry.

- *Mr. Aruna*, a senior developer, mentions that the team conducts a 10–20 minute meeting every day.
- *Ms. Hiranya*, a senior business analyst, also serves as the *Scrum Master* for the team.
- *Mr. Nizan* contributes to the phase of the software development cycle before deployment.
- *Ms. Shiron* is the *Project Manager*.

Ms. Shiron says *Medihelp Hospital* requested a new feature that allows patients to upload their lab reports for doctors to review, a feature which is not available at the moment. She is responsible for managing the product backlog. The current version of the software is *V5.1* and the team uses Jira for project communication and task tracking.

- (i) What is known as *software*? (5 marks)
- (ii) Read the case study and answer the below questions.
- A. What software development methodology is Zintech Software Solutions using? (2 marks)
- B. What is the name of the short daily meeting mentioned by Mr. Aruna? (2 marks)
- C. What is the role played by Ms.Shiron in this methodology? (2 marks)
- D. What is the artifact that fetches items from the product backlog? (2 marks)
- E. Which phase of the software development life cycle is Mr. Nizan involved? (2 marks)
- F. What would be the next version number of the software after adding the new feature? (2 marks)
- (iii) “*Changes are unavoidable for a software*” Explain this statement. (5 marks)
- (iv) Define what is a *software requirement*. (3 marks)

(Q02) (25 marks)

- (i) Define what is a known as a software process. (4 marks)
- (ii) What are the four main phases of Rational Unified Process (RUP)? Explain the phases briefly. (6 marks)
- (iii) Explain the Requirement Elicitation and Analysis Process (7 marks)
- (iv) How do you select a suitable fact-gathering technique for a software project? (8 marks)

(Q03) (25 marks)

- (i) Define what is a system model. (4 marks)
- (ii) Mentioned the entity levels of system reuse. (6 marks)
- (iii) Explain an incremental development process. (7 marks)
- (iv) Explain the importance of using coding standards and coding conventions (8 marks)

(Q04)

(25 marks)

- (i) What are Martin's Four Necessary Pillars for the Rapid Application Development (RAD) Approach? (4 marks)
- (ii) Explain what is known as "*Feature creep*". (6 marks)
- (iii) Explain Martin's RAD life cycle. (7 marks)
- (iv) Component characteristics are very important to do the Component Based Software Engineering (CBSE). List down characteristics and explain the statement. (8 marks)

(Q05)

(25 marks)

- (i) What are the two primary goals of software testing? (4 marks)
- (ii) Explain what is "*system testing*". (6 marks)
- (iii) Explain the importance of having regression testing as testing type in software engineering. (7 marks)
- (iv) "*Testing is not just about finding bugs, but about finding limits.*" Explain this statement in relation to performance testing. (8 marks)

(Q06)

(25 marks)

- (i) What is known as software maintenance? (4 marks)
- (ii) Mention agile values and explain one of the values. (6 marks)
- (iii) Mention four software maintenance types and explain them. (7 marks)
- (iv) "*Accurate cost estimation can prevent cost overruns.*" Explain this statement using the cost estimation techniques you know. (8 marks)

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