विश्वजीवनामृतं ज्ञानम्

Atal Bihari Vajpayee Indian Institute of Information Technology & Management, Gwalior

IT404: Software Engineering

Minor Examination (Session 2023–24)

Maximum Time: 1 Hour   Max Marks: 25

Note: Attempt all questions. Keep answers crisp; diagrams help.

1. **True / False (with one-line justification) — 2 marks each:**
   (a) Software cost estimation using COCOMO requires the number of delivered source instructions (KDSI).
   (b) A use-case describes system behaviour from an external actor's perspective.
   (4 Marks)

2. **Multiple Choice — 1 mark each:**
   (a) Which activity is part of verification? (i) Unit testing (ii) Acceptance testing (iii) Requirements elicitation (iv) Maintenance
   (b) Scrum recommends sprints of: (i) 1–4 weeks (ii) 6–12 weeks (iii) 3–6 months (iv) 1 year
   (2 Marks)

3. Define the difference between functional and non-functional requirements and give one example of each.   (4 Marks)

4. Briefly describe the purpose of an SRS (Software Requirements Specification). List two key sections it should contain.   (4 Marks)

5. Explain cyclomatic complexity. Given a function with decision points = 3, sequential edges = 5, compute the cyclomatic complexity (state formula).   (5 Marks)

6. Write short notes on any one (choose): (a) Version control branching strategies (b) Static code analysis tools — give two examples and their benefits.   (6 Marks)