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

IT404: Software Engineering

Minor Examination (Session 2024–25)

Maximum Time: 1.5 Hours   **Max Marks: 30**

Note: Attempt all questions. Justify your answers with suitable examples/diagrams.

1. **True/False with justification — 2 marks each (Total 6 Marks):**
   (a) A Gantt chart is primarily used for risk management.
   (b) Agile methodologies discourage documentation.
   (c) Regression testing ensures that new changes do not break existing functionality.

2. Define and differentiate between *Verification* and *Validation* with examples.   (4 Marks)

3. Explain the **Spiral model**. How does it handle risk differently compared to the Waterfall model?   (5 Marks)

4. (a) What is cohesion in software modules? Give an example of high cohesion. (3 Marks)
   (b) What is coupling in software modules? Illustrate with an example. (3 Marks)

5. **Numerical:** Using the basic COCOMO model for an organic project: Effort $= 2.4 \times (\text{KLOC})^{1.05}$. Calculate effort for 15 KLOC.   (4 Marks)

6. Write short notes on any **two**: (i) Use-case diagrams (ii) Software prototyping (iii) Technical debt.   (5 Marks)