

(2 ½ Hours)

[Total Marks: 75]

- N.B: (1) All questions are compulsory.
 (2) Figures to the right indicate marks.
 (3) Illustrations, in-depth answers and diagrams will be appreciated.
 (4) Mixing of sub-questions is not allowed.

Q1. Attempt the following (any THREE): (15M)

- (A) Define software. Explain any four characteristics of software.
- (B) Discuss SDLC and its phases.
- (C) What is software engineering? Give its principles.
- (D) Explain the prototyping model in detail with the help of a diagram. State its advantages and also its limitations.
- (E) List different myths about software.
- (F) Give the meaning of software engineering process. List its characteristics.

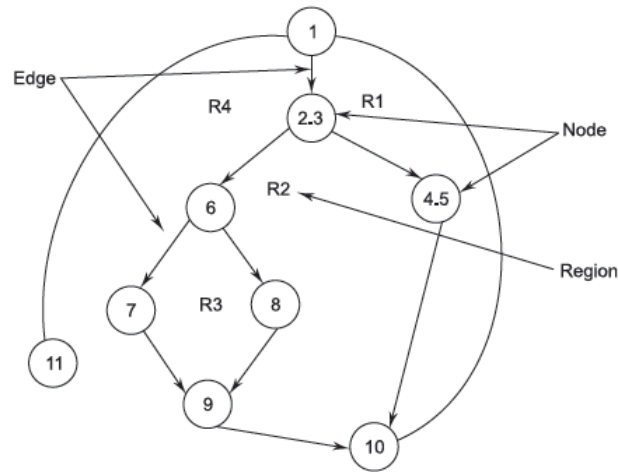
Q2. Attempt the following (any THREE): (15M)

- (A) Discuss Requirements Elicitation and Analysis Process Model
- (B) What is Software Quality Assurance? Give its process and goals.
- (C) What are the characteristics of a good SRS document? Explain.
- (D) Discuss the following:-
 - i) Verification ,Validation and its goal
 - ii) Two techniques of system checking
- (E) Explain Data Flow diagrams and its symbols with example.
- (F) Define software quality. Explain two different classifications of software-related qualities.

Q3. Attempt the following (any THREE): (15M)

- (A) What is system design? Explain its three principles.
- (B) Explain: (a) Product metrics (b) Process metrics (c) Project metrics
- (C) Define architectural design. What are the objectives of architectural design?
- (D) What are the main principles of testing?
- (E) Explain black box testing and its categories.

- (F) A set of independent paths for the flow graph is given in the following figure:-



Calculate Cyclomatic complexity.

Q4. Attempt the following (any THREE): (15M)

- Define the term "debugging." List debugging techniques. Explain any three.
- What is CASE? Explain different categories of CASE tools.
- Write a note on Reverse Engineering and its purpose.
- Discuss about structured programming.
- Define static testing. Explain any two strategies of it.
- Write in brief about 4th generation techniques.

Q5. Attempt the following (any THREE): (15M)

- Write a note on Spiral model.
- What is ISO? Discuss ISO certification.
- Discuss levels of testing.
- Explain various programming styles.
- When to use decision tables? Explain with example.
- What is test case design? Explain its format.
