(2½ hours)   Marks: 75

N. B.: (1) **All** questions are **compulsory**.
        (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
        (3) Answers to the **same question** must be **written together**.
        (4) Numbers to the **right** indicate **marks**.
        (5) Draw **neat labeled diagrams** wherever **necessary**.
        (6) Use of **Non-programmable** calculators is **allowed**.

1. **Attempt _any two_ of the following:**   10
   a. What is software testing? What are the objectives of software testing?
   b. Briefly explain the seven principles of software testing.
   c. What is fundamental test process in software testing? List the major tasks involved in test planning.
   d. Write note on psychology of testing.

2. **Attempt _any two_ of the following:**   10
   a. Explain the two specific types of tests related to software changes.
   b. Explain top-down and bottom up integration. List the advantages and disadvantages of each.
   c. What is maintenance testing? Explain the different types of modifications during maintenance testing.
   d. Describe black-box and white-box testing.

3. **Attempt _any two_ of the following:**   10
   a. What is static testing? List the objectives and advantages of static testing on software work products.
   b. What is technical review? List the goals and characteristics of technical review.
   c. List the six work steps of formal review. Explain the three phases of review meeting.
   d. Explain the success factors of reviews.

4. **Attempt _any two_ of the following:**   10
   a. Explain boundary value analysis with the help of an example.
   b. Briefly explain the two experience-based techniques for testing.
   c. Briefly explain the internal and external factors that influence the selection of appropriate test design technique.
   d. Explain statement and decision coverage with the help of example.

5. **Attempt _any two_ of the following:**   10
   a. What is risk? Explain the different classifications of risk in software testing.
   b. With the help of diagram, explain incident report life cycle.
   c. Explain the typical factors that influence the effort related to testing.
   d. Define entry and exit criteria. What are the factors to consider in deciding entry and exit criteria for software testing?

6. **Attempt _any two_ of the following:**   10
   a. What are the benefits and risks of test automation and tool support for testing?
   b. State features of coverage measurement tools and security tools.
   c. State the goals of piloting phase for tool evaluation. What are the factors that contribute to the success when implementing a testing tool?
   d. What are the features of review process support tools?

7. **Attempt _any three_ of the following:**   15
   a. Define the following terms
      i)Test policy   ii)Quality   iii)Fault   iv)Test suite   v)Debugging
   b. With the help of diagram explain V-model in software testing.
   c. What is cyclomatic complexity? With the help of an example, explain two ways to calculate cyclomatic complexity.
   d. What is test basis? Describe the process of identifying test conditions.
   e. What are the activities involved in test planning? List the components of test plan.
   f. Define stub and driver. What are the characteristics of test harnesses and unit test framework tools?