

Roll No. ....

**23073**

**M.Tech. 2nd Semester  
(Computer Engineering)**

**Examination–January, 2013**

**Software Verification Validation & Testing**

**Paper-MTCE-608-A**

***Time : 3 hours***

***Max. Marks : 100***

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Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

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**Note :** Attempt **five** questions out of eight questions. All questions carry equal marks.

1. (a) ' Testing is the process of executing a program with the intent of finding the error'. Comment on this statement. What should be the psychology of the testing team ?

- (b) Differentiate between error fault and failure with suitable examples. Also discuss the goals of testing.
2. Differentiate between V & V. Also take a project and identify the test activities according to SDLC phase.
3. (a) Why do we require verification and validation ? Is it important to perform both V & V ? Justify your answer.
- (b) What is the role of test plans in V & V diagram ? Also discuss verification of HL design.
4. (a) A program calculates the GCD of three numbers in the range [1,50]. Design test cases for this program using equivalence class testing technique.
- (b) Explain grappling and state based testing technique with their limitations.
5. What is the significance of cyclomatic complexity ? How do you calculate the number of decision nodes for switch-case ? Also explain path testing and loop testing with suitable examples.

6. What are the stages of an inspection process ? How does the rate of inspection affect the effectiveness of the inspection process ? Also discuss the advantages of static testing.
7. What is the difference between alpha and beta testing ? Explain the entry and exit criteria for alpha and beta testing. Also discuss security and stress testing.
8. Write the short notes on the following :
- (a) Testing metrics
  - (b) Test case management
  - (c) Regression testing
  - (d) Designing of test cases.
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