

AQ – 2902

Second Semester M. E. (Comp. Science and IT) (CGS) Examination
(New)

SOFTWARE ENGINEERING TESTING AND RELIABILITY

Paper - 2 RNME 4

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

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- Note :** (1) Due credit will be given to neatness and adequate dimensions.
(2) Assume suitable data wherever necessary.
(3) Illustrate your answer wherever necessary with the help of neat sketches.

1. (a) How 'Requirement' and 'Design' are related ? What are fundamental principles of Requirements ? 6
- (b) What is the purpose of Behavioural Models ? What are different types of Behavioural models and their uses ? 7

OR

2. (a) What different stages are involved in the Object Oriented Design ? 6
 - (b) What is DML class diagram ? Explain in brief by giving examples of symbols and notations used. 7
3. (a) Explain in brief reliability validation ? 6
 - (b) Explain following stages involved in testing process :
 - (i) Unit Testing.
 - (ii) System Testing and.
 - (iii) Module Testing. 7

OR

4. (a) Explain in brief how debugging process is integrated and related with verification and validation activities. 7
- (b) What is defect and bug ? Explain by giving examples. 6

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5. (a) What is interface testing ? What are the general guidelines for the interface testing ? 8
- (b) What is the purpose of stress testing ? 6

OR

6. (a) What is Black-Box testing ? Why is it also called as functional testing? 5
- (b) What is the importance of alpha and beta testing. 5
- (c) What is integration testing ? 4

7. (a) What quality factors are considered in software quality management ? 7
- (b) What is object oriented testing ? 6

OR

8. (a) Explain in brief the debugging process. 7
- (b) Which software metrics are used to evaluate the efforts and the time required to repair the defects ? 6

9. (a) Explain in brief Monte Carlo Simulation Method for system reliability analysis. 7
- (b) Explain in brief, statistical data analysis method used in reliability. 7

OR

10. (a) What is reliability and the basic principles of Reliability analysis? 7
- (b) Explain the Weibull distribution in the reliability engineering process. 7

11. (a) What is prediction model ? Why usually prediction models are formed prior to the software developments and regular test phases ? 7

- (b) What is the need of observing and accumulating failure data and analysing it with statistical inference ? 6

OR

12. (a) What is Fault-Tree Analysis (FTA) Technique ? 6
- (b) How software reliability models help us in understanding characteristics of how and why software fails ? 7



