

Duration: 3hrs**[Max Marks:80]**

- N.B. : (1) Question No 1 is Compulsory.
 (2) Attempt any three questions out of the remaining five.
 (3) All questions carry equal marks.
 (4) Assume suitable data, if required and state it clearly.

1 Attempt any FOUR

[20]

- Define each software testing terminology:
 i) Failure, ii) Defect, iii) Error, iv) Testware and v) Test oracle.
- What is Mutation testing? Differentiate between primary and secondary mutants.
- What criteria you will consider for selection of test tools for automation Testing.
- Explain structure of testing Group.
- Discuss Six Sigma.

2 a Consider a project with the following distribution of data and calculate its defect spoilage.

SDLC Phase	No. of Defects	Defect Age
Requirement Specs.	34	2
HLD	25	3
LLD	17	7
Coding	10	8

[10]

b Explain Agile Testing Life Cycle and its challenges.

[10]

3 a A program reads three numbers A, B and C, within the range [1,100] and prints the minimum number. Design test cases for this program using BVC and Robust testing methods.

[10]

b What is the need of software measurement? Discuss the various types of software metrics.

[10]

4 a What is the need of automation testing activities? Differentiate between static and dynamic tools?

[10]

b Consider following C code.

[10]

```
main()
{
    int number, index;
    1. printf("Enter a number");
    2. scanf("%d",&number);
    3. index=2;
    4. while(index<=number-1)
```

```
5. {  
6.   if(number%index==0)  
7.   {  
8.       printf("Not a prime number");  
9.       break;  
10.  }  
11.  index++;  
12. }  
13. if(index==number)  
14.  printf("prime number");  
15. } // end main
```

Draw DD graph, Calculate cyclomatic complexity, List out independent paths and design test cases.

- 5 a What are the components of a test plan? Illustrate test plan hierarchy with a neat diagram. [10]
b Explain McCall's Quality factors and Criteria. [10]
- 6 a Explain a bug life cycle with a neat diagram in detail. List down the states of a bug. [10]
B Differentiate between Effective Software Testing and Exhaustive Software Testing. [10]