May 2024
**BCA- VI SEMESTER**
**Software Testing (BCA-17-307)**

Time : 3 Hours]                              [Max. Marks : 75

*Instructions :*

1.  *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2.  *Answer any four questions from Part-B in detail.*
3.  *Different sub-parts of a question are to be attempted adjacent to each other.*

## PART–A

**1.**  (a)  Discuss the importance of software testing.    (1.5)

(b)  Differentiate between test case and test ware.    (1.5)

(c)  How verification of LL design is performed ?    (1.5)

(d)  Differentiate between Unit, integration and system testing.    (1.5)

(e)  List the differences between drivers and stubs.    (1.5)

(f)  Explain the regression test process.    (1.5)

(g)  Discuss Exception handling in testing process.    (1.5)

(h)  What is usability testing?    (1.5)

(i) Explain Class testing in reference to object-oriented systems. (1.5)

(j) How testing of web-based system is performed? (1.5)

## PART–B

2. (a) Differentiate between Bug, error, fault and failure. (10)

(b) Explain Life cycle of Bug in detail. (5)

3. (a) Consider the following program that reads in a string and then checks the type of each character

```
Main( )
{
Char string[80];
Int index;
printf("enter the string for checking its characters");
scanf("%s",string);
for( index=0;string[index]!='\0';++index) {
if ((string [index] >= '0' && (string[index] <='9'
printf("%c is a digit", string[index]);
else if ((string[index]>='A' && string[index] <'Z'))||
    ((string[index]>='a' && (string[index]< 'z')))
    printf("%c is an alphabet", string [index]);
else
Printf("%C IS a special character", string [index]);
    }
    }
```

(a) Draw the DD graph for the program.

(b) Calculate the cyclometric complexity of the program using all the methods.

(c) List all independent paths.

(d) Design test cases from independent paths. (10)

(b) Explain Logic Coverage Criteria. (5)

4. (a) Consider a program to determine largest of three numbers A, B and C withinthe range [1,50] and prints the largest number. Design boundary value test cases. (10)

(b) Discuss the State table Based Testing method. (5)

5. What is Regression Testing? Illustrate the objectives of regression testing. Explain its process. (15)

6. (a) Illustrate various testing principles. (10)

(b) Explain Security and recovery testing. (5)

7. (a) Discuss various Testing Metrics. (5)

(b) List the core features of use-case based testing. Differentiate between use case and test case. (10)