TE (ECS) Sem-5 G-scheme Winter 2025 Exam
21/11/25

Duration: 3hrs **Marks: 80**

Note:

1. Question **No. 1** is compulsory.
2. Attempt **any three** questions out of remaining **five** questions.
3. Assume suitable data wherever necessary.
4. Figures to right indicate full marks.

			Marks
Q.1		Answer the following **(Any four)**	
	a.	Explain Goals of software testing.	05
	b.	Explain Regression Testing.	05
	c.	Discuss the Challenges related to Agile testing.	05
	d.	What is acceptance testing? Explain its types.	05
	e.	State the difference between Verification and validation.	05
Q.2	a.	A Program accepts a, b, c as 3 sides of a triangle. The range of a, b, c is [1,100].Program outputs type of triangle as one of scalene, isosceles, equilateral and not a triangle which is formed by a, b, c. Design test cases using Boundary Value Checking (BVC) and Robustness Testing Method.	10
	b.	What are the components of test plan document? Explain the structure of testing Group.	10
Q.3	a.	Consider the following program that reads in a string and then checks the type of each character.	10

```
main()
{
   char string [80];
   int index;
    1. printf("Enter the string for checking its characters");
    2. scanf("%s",string);
    3. for(index=0;string[index]!='\0';++index){
    4.    if(string[index]>='0' && string[index]<='9')
    5.      printf(" %c is a digit", string[index]);
    6.    else if(string[index]>='A' && string[index] < 'Z' || string[index]
      >= 'a' && string[index] < 'z')
    7.      printf("%c is alphabet", string[index]);
    8.    else
    9.      printf("%c is a special character", string[index]);
   10.  }
   11. }
```

i. Draw a DD graph for the above program
ii. Calculate the cyclomatic complexity of the program.
iii. List all the independent paths

Design test cases from all the independent paths.

	b.	Explain test suite minimization and its benefits in detail.	10

Q.4 a. Explain the need of automation testing also mention guidelines to be considered while selecting the testing tool. 10

b. Draw and Explain Software testing life cycle. 10

Q.5 a. Explain the classification of software metrics in detail. 10

b. A program determines the next date in the calendar. Its input is entered in the form of <ddmmyyyy> with the following range: 10

1<= mm <=12

1 <= dd <= 31

1900 <= yyyy <= 2025

Its output would be the next date or it will display 'invalid date.' Design test cases for this program using BVC, robust testing.

Q.6 a. Describe Static testing types. 10

b. Describe MC-Calls Quality factors and Criteria. 10

****

75