**MANAV RACHNA UNIVERSITY**

**Department of CST**

**(CSH207B-T & P – Software Engineering)**

**(Tutorial 10)**

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| Course Outcome | Bloom’s Taxonomy | Program Outcome |
| CO4 | BT3 | PO1,2,3,5,11, PSO1,2 |

**Learning Outcome: Students will be able to understand the concepts of software testing.**

Q1. Define testing.

Q2. Differentiate between error, fault and failure. Give examples for each.

Q3. Explain why we should test a program, what should we test in a program and who should test a program.

Q4. Consider a simple program to classify a triangle. Its inputs are a triple of positive integers (say x, y, z) and the data type for input parameters ensures that these will be integers greater than 0 and less than or equal to 100. The program output may be one of the following words:[Scalene; Isosceles; Equilateral; Not a triangle].

Design the test cases for boundary value testing, robustness testing and worst case testing.

Q5. Consider the above triangle problem. Identify the equivalence class test cases for output and input domain. After determining test cases draw the decision table.

Q6. Consider the flow graphs shown below, compute the cyclomatic complexity by various methods you have studied.

 

(1) (2)

Q7. Consider the given program for calculating the factorial of a number. It consists of main() program and the module fact().

(a) Draw the control flow graphs *for* ***main() and fact().***

(b) Calculate the individual cyclomatic complexities *for* ***main() and fact()*** respectively and then, the cyclomatic complexity for the whole programusing all the formulas for complexity calculation.

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| main()  {  int number;  int fact();   1. clrscr(); 2. printf(“enter the no whose factorial is to be found”); 3. scanf(“%d”,&number); 4. if(number<0) 5. printf(“factorial cannot be defined for this no”);; 6. else 7. printf(“factorial is %d”, fact(number)); 8. } | int fact(int number)  {  int i;   1. int product=1; 2. for(i=1; i<number; i++) 3. product=product\*i; 4. return(product); 5. } |