312406

May 2023
BCA(DS) 4th SEMESTER
Software Testing (GEC-DS-5)

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) What is hybrid approach to software testing? (1.5)

   (b) Define the terms : Error, Fault, Failure. (1.5)

   (c) What is the difference between testing and debugging? (1.5)

   (d) What is state based testing? (1.5)

   (e) Differentiate between Alpha and Beta testing. (1.5)

   (f) What is the difference between load and stress testing? (1.5)

(g) What is mutation testing? (1.5)

(h) What is the difference between functional testing and system testing? (1.5)

(i) What is the psychology of the testing? (1.5)

(j) What is the need of verification and validation? (1.5)

PART–B

2. (a) What are the objectives of software testing? What is the need of testing? What are the limitations of testing? Briefly discuss the different levels of testing with examples. (9)

(b) What is regression testing? What are various regression testing techniques? (6)

3. (a) Discuss V&V activities in detail. (9)

(b) Explain in detail how the testing of an object-oriented software is differed from the non-object oriented software. (6)

4. (a) A whole seller has three commodities to sell and has three types of customers. Discount is given as per the following procedure : (9)

For DC's & D orders, 10% is given irrespective of the value of the order.

(ii) For orders of more than Rs. 50,000 agents get a discount of 15% and the retailer gets a discount of 10%.

(iii) For orders of Rs. 20,000 or more and up to Rs. 50,000 agents get 12% and retailer gets 8% discount.

(iv) For orders of less than Rs. 20,000, agents get 8% and the retailer gets 5% discount.

The above rules do not apply to the furniture items wherein a flat rate of 10% discount is admissible to all customers irrespective of the value of the order. Design the test cases for this software using decision table-based testing.

(b) What are Stubs and Drivers? What are the benefits for designing them? (6)

5. (a) A program reads three numbers A, B and C within range [1,100] and prints the smallest number. Design test cases for this program using BVC and robust testing. (9)

(b) Explain in detail how the testing of a web-based application can be done? (6)

6. (a) Consider the following program: (9)

```
# include < stdio. h>
main ()
{
    int num, small;
    int i, j, sizelist, list [10], pos, temp;
    printf ("\Enter the size of the list:");
    scanf ("%d", & sizelist);
    for (i=0; i< sizelist;i++)
    {
        printf("enter the number");
        scanf("%d", &list[i]);
    }
    for (i=0; i<sizelist; i++)
    {
        small = listfi];
        pos = i;
        for(j=i+1; j<sizelist; j++)
        {
        if(small > list[j]
            {
                small = list [j];
                pos = j;
            }
            temp = list [i];
            list[i] = list[pos];
            list[pos] = temp;
        }
        printf ("\nList of the numbers in ascending order:");
        for (i=0; i < sizelist; i++)
                printf ("\n %d", list[i]);
        getch ();
    }
```

(a) Draw the DD graph for the program.

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

(c) List all independent paths.

(d) Design all test cases from these independent pa

(b) List the criterion for selection of a testing tool. Wh are the advantages of using testing tools?

7. Write short note on any *three* the following :

(i) Performance testing and Usability testing.

(ii) Agile and extreme testing.

(iii) Data flow-based testing.

(iv) Acceptance testing.

2. (a) What are the objectives of software testing? What is the need of testing? What are the limitations of

Briefly discuss the

PART–B

(5)

(g) What is mutation testing?

(h) What is the difference between functional testing and system testing?

(i) What is the psychology of the testing?

(j) What is the need of verification and validation? (1.5)

(iii) For orders of Rs. 20,000 or more and up to Rs. 50,000 agents get 12% and retailer gets 8% discount.

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