

```

case 2: d =a-b;
printf("Subtraction of two no.=%d",d);
break;
case 3: d =a*b;
printf("Multiplication of two no.=%d",d);
break;
case 4: d =a+b;
printf("Division of two no.=%d",d);
break;
}
}

```

- (i) Draw the DD graph for the program.
- (ii) Calculate cyclomatic complexity of the program using all methods.
- (iii) List all independent paths.
- (iv) Design all test cases from these independent paths. (10)
- (b) Define Static Testing. What are various methods for performing static testing? (5)

7. Write short notes on any *three* of the following :
 - (a) Object Oriented testing.
 - (b) Life cycle of a bug.
 - (c) Software testing life cycle model.
 - (d) Load testing, Stress testing, Recovery testing. (15)

311602

May, 2022
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) Differentiate between Exhaustive testing and Effective testing. (1.5)
- (b) Define Failure, Bug and Error. (1.5)
- (c) Differentiate between Verification and Validation. (1.5)
- (d) What is the difference between Functional Testing and System Testing? (1.5)
- (e) How bugs affect the economics of testing? (1.5)
- (f) Define Regression testing. What is the purpose of regression testing? (1.5)
- (g) What are the advantages of static testing as compared to dynamic testing? (1.5)

- (h) Classify the bugs based on their criticality. (1.5)
- (i) What are the limitations of software testing? (1.5)
- (j) What is error guessing? (1.5)

PART-B

- 2. (a) Discuss V&V activities in detail. (10)
- (b) What are Stubs and Drivers? What are the benefits for designing them? (5)
- 3. (a) Explain the V model in detail. (5)
- (b) Discuss in detail the various testing principles and myths about software testing. (10)

- 4. (a) A university is admitting students in a professional course subject to the following conditions:
 - (i) Marks in Java ≥ 70
 - (ii) Marks in C++ ≥ 60
 - (iii) Marks in OOAD ≥ 60
 - (iv) Total in all three subjects ≥ 220 OR Total in Java and C++ ≥ 150

If the aggregate marks of an eligible candidate are more than 240, he will be eligible for scholarship course; otherwise he will be eligible for normal course. The program reads the marks in the three subjects and generates the following outputs : (i) Not eligible (ii) Eligible for scholarship course (iii) Eligible for normal course.

Design the test cases for this software using decision table based testing. (10)

- (b) What are various Software Testing Metrics? (5)

- 5. (a) What are Stubs and Drivers? What are the benefits for designing them? (5)
- (b) Consider a program to classify a triangle. Its inputs are a triple of positive integers and the data type for input parameters ensures that these will be integers greater than zero and less than equal to 100. The program output may be one of the following : {Scalene, Isosceles, Equilateral, Not a triangle}. Design the boundary value, robust test and worst case test cases for the same. (10)

- 6. (a) Consider the following program :

```
#include<stdio.h>
main()
{
int a,b,c,d;
clrscr();
printf("enter the two variables a ,b");
scanf("%d %d",&a,&b);
printf("enter the option 1:Addition,2:Subtraction ,3:Multiplication 4:Division");
scanf("%d",&c);
switch(c)
{
case 1: d =a+b;
printf("Addition of two no.=%d",d);
break;
```