Sr. No. of Question Paper : 858   E   Your Roll No................

Unique Paper Code   : 234605

Name of the Course   : **B.Sc. (H) Computer Science**

Name of the Paper   : Software Testing (Elective) [CSHT–616(i)]

Semester   : VI

Duration : 3 Hours   Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. **Section A** is compulsory.

3. Attempt any **four** questions from **Section B.**

SECTION A
(Compulsory)

1. (a) Discuss a scenario which limits the applicability of boundary value analysis.   (2)

    (b) What is a Risk matrix ?   (2)

    (c) Discuss the need of configuration testing.   (2)

    (d) List any two key issues of database testing.   (2)

    (e) What is Top down integration testing ?   (2)

    (f) *"Complete testing is not possible."* Justify this statement.   (2)

    (g) Define the following terms –

        (i) Fault

        (ii) Definition-clear path in data flow testing

(iii) Quality control

(iv) Regression testing (4×2=8)

(h) Differentiate between the following – (5×3=15)

(i) Black box testing and White box testing

(ii) Verification and Validation

(iii) Unit testing and Integration testing

(iv) Stub and Driver

(v) Load testing and Stress testing

SECTION B

(Attempt any **four***)*

2. (a) What is *"worst case"* testing ? How is it different from boundary value testing ? Explain the difference with the help of an example. (6)

(b) Describe the ISO 9000 Quality standard for testing. (4)

3. (a) Define *software availability*. Describe the measures for evaluating software availability. (6)

(b) Discuss the need of *Smoke Testing*. (4)

4. (a) List the strategies followed for debugging a program. Explain each in detail. (6)

(b) Describe the review guidelines for *Formal Technical Review*. (4)

5. Consider the following program (4+4+2=10)

```
#include<iostream.h>
void main( )
{
```

```
1.   int num, index=2;;

2.   cout<<"\n Enter a number : ";

3.   cin>>num;

4.   while (index <= num-1)

5.   {

6.       if (num % i == 0)

7.       {

8.           cout << "\n NOT PRIME";

9.           Break;

10.      };

11.      index++;

12.  }

13.  if (index == num)

14.      cout<<"\n PRIME";

15.  }
```

(i) Draw the program flow graph.

(ii) Identify the independent paths.

(iii) Calculate the cyclomatic complexity.

6. A university is admitting student in a professional course subject to the following conditions.

(a) Marks in Java >=70

(b) Marks in C++ >=60

(c) Marks in OOAD >=60

(d) Total in all 3 subjects >= 220 or total marks in Java and C++ >=150

If the aggregate marks of an eligible candidate are more than 240, then the candidate will be eligible for scholarship. The program reads marks in 3 subjects

and generates the following outputs

(a) Not eligible

(b) Eligible for scholarship

(c) Eligible for the course.

Design test cases for the above scenario using a Decision table.   (10)

7. Write short notes on the following (any **two**) :

(i) Performance Testing

(ii) SQA plan

(iii) Debugging techniques

(iv) Security Testing for Web Applications   (2×5=10)