BE | IT | Sem-VII | CBCGS | R-19 | C-Scheme | SH-24 | STQA

Time: 3 Hours **Marks: 80**

QP-10064961

N.B.: 1) Question No. 1 is compulsory.

2) Answer any three out of the remaining questions.

3) Assume suitable data if necessary.

4) Figures to the right indicate full marks.

Q1. Attempt any FOUR 20

(a) Explain Software Testing Life Cycle.

(b) Discuss different types of software metrics.

(c) Discuss about IBM Rational Functional Tester as an Automation Testing Tool.

(d) Explain Error Guessing in Dynamic Testing.

(e) Discuss the ISO 9000:2000.

Q2. Consider the following program segment: 10

```
main()
{
   int number, index;
1.  printf("Enter a number");
2. scanf("%d, &number);
3. index = 2;
4. while(index <= number – 1)
5. {
6.        if (number % index == 0)
7.       {
8.                printf("Not a prime number");
9.                break;
10.      }
11.      index++;
12.       }
13.      if(index == number)
14.      printf("Prime number");
15.      } //end main
```

(a) Draw the DD graph for the program.

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

(c) List all independent paths.

(d) Design test cases from independent paths.

Q2. (b) Explain Regression Testing and its types in detail 10

Q3. (a) Explain Test Point Analysis. 10

Q3. (b) Discuss Automation Testing Tool selection and cost criterias. 10

Q4. (a) Explain Agile Testing and its Life Cycle. 10

Q4. (b) Compare the Traditional software and Web based software. 10

Q5. (a) Explain Alpha and Beta Testing. 10

Q5. (b) Discuss Efficient Test Suite Management 10

Q6. (a) Explain the concept of Six Sigma. 10

Q6. (b) Explain the Verification of high level design. 10

B.E. IT / Sem-VII / R-19 'C' Scheme / Sub:- STQA / F.H. 2025
Date:- 06/06/2025

(3 Hours) [Marks: 80]

AP. Code:- 10080374

N.B.: 1) Question No. 1 is compulsory.
2) Answer any three out of the remaining questions.
3) Assume suitable data if necessary.
4) Figures to the right indicate full marks.

Q1. Attempt any FOUR (20)

(a) Differentiate between Effective Software Testing vs Exhaustive Software Testing.
(b) Explain Acceptance Testing.
(c) What are the benefits of Test Suite Minimization?
(d) Explain the cost incurred in Automation testing tools.
(e) Compare Traditional Software Testing and Web based Software Testing..

Q2 (a) Explain the verification of Requirements and Objectives in Software testing. (10)

Q2 (b) A program reads an integer number within the range [1,100] and determines whether it is a prime number or not. Design test cases for this program using BVC, robust testing, and worst-case testing methods. (10)

Q3 (a) Explain in detail the Structure of Testing Group. (10)

Q3 (b) Explain any two Automation tools in detail. (10)

Q4 (a) Explain Agile Testing Life Cycle, along with the challenges in Agile Testing. (10)

Q4 (b) Explain McCall's quality factors and Criteria (10)

Q5 (a) What are graph metrics? Explain with an example how to calculate cyclomatic complexity using graph metrics. (10)

Q5 (b) Explain Mutation Testing in detail (10)

Q6 **Write a short note on any four.** (20)

(a) ISO 9000:2000
(b) Inspection
(c) Classification of software matrices
(d) Integration Testing
(e) Validation in Software Testing

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Date- 30/12/2023

BE | IT | Sem-VII | CBCGS | R-19 | 'C' Scheme | Sub-STQA | S.H.2023

QP.Code - 1004|368

Duration : 3hrs **(Max Marks: 80)**

Please check whether you have got the right question paper.

N.B:
1. **Question No 1 is Compulsory**
2. **Attempt any three questions out of the remaining five.**
3. **All question carry equal marks.**
4. **Assume suitable data, if required and state it clearly.**

1		Attempt any FOUR	(20)
	A	What are the guidelines to select appropriate testing tool?	
	B	What is the need of Automation testing	
	C	Differentiate between Verification and Validation	
	D	What are the different types of bugs depending upon stages of SDLC	
	E	What are key elements of Test Management?	
2	A	A program reads three numbers, A, B, and C, with in the range (2, 1000) and prints the Largest number. Design test cases for this program using BVC, robust testing method	(10)
	B	What are the Quality Factors and Criteria outlined by McCall, and how do they contribute to the overall understanding of software quality?	(10)
3	A	How do unit Testing and Integration testing differ from each other?	(10)
	B	What exactly is Mutation Testing, and could you elaborate on the concept of a primary mutant with one example.	
4	A	Explain Different components of Test plan document	(10)
	B	Explain Test Point Analysis.	(10)
5	A	How does Agile testing work, and what are some of the challenges that can arise in the process?	(10)
	B	What insights can be gained from exploring Graph Metrics?	(10)
6	A	What difficulties do you encounter when testing web-based software?	(10)
	B	What is Alpha testing? What is the entry and exit criteria for Alpha Testing	(10)

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(3 Hours) [Marks: 80]

N.B.: 1) Question No. 1 is compulsory.
2) Answer any three out of remaining questions.
3) Assume suitable data if necessary.
4) Figures to the right indicate full marks.

Q1. Attempt any FOUR 20

(a) Define software testing. Explain software testing model with a neat diagram.
(b) Define Software Metrics. List different types of Software metrics.
(c) Compare Static and Dynamic Testing.
(d) Compare Traditional Software Testing and Web based Software Testing.
(e) Explain the need of Automation in testing.

Q2. (a) Explain Verification in high level and low level design. 10

Q2. (b) A program takes an angle as input within the range [0,360] and determines in which quadrant the angle lies. Design test cases using equivalence class partitioning method. 10

Q3. (a) Explain McCall's quality factors. 10

Q3. (b) Explain Regression Testing in detail. 10

Q4. (a) What is Agile testing? Explain challenges in Agile Testing 10

Q4. (b) Differentiate between Effective Software Testing and Exhaustive Software Testing. 10

Q5. (a) Consider the program for calculating the factorial of a number. It consists of main() program and the module fact(). Calculate the individual cyclomatic complexity number For main() and fact() and then, the cyclomatic complexity for the whole program. 10

```
main()
        {
        int number;
        int fact();
        clrscr();
        printf("Enter the number whose factorial is to be found out");
        scanf("%d", &number);
        if(number <0)
                printf("Facorial cannot be defi ned for this number);
else
                printf("Factorial is %d", fact(number));
        }
```

```
int fact(int number)
{
int index;
 int product =1;
for(index=1; index<=number; index++)
        product = product * index;
return(product);
}
```

Q5. (b) Describe the procedure for Test Point Analysis (TPA) 10

Q6. Write short note on any TWO. 20

a) JIRA Automation Testing Tool
b) SIX sigma
c) Efficient Test Suite Management

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BE/IT/sem-VII/CBCGS/R-19-20/c scheme/STQA/SH-22

Duration: 3hrs **[Max Marks:80]**

QP-100153 46

N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

1 Attempt any FOUR **[20]**

a Define each software testing terminology:
i) Failure, ii) Defect, iii)Error, iv)Testware and v)Test oracle.

b What is Mutation testing? Differentiate between primary and secondary mutants.

c What criteria you will consider for selection of test tools for automation Testing.

d Explain structure of testing Group.

e Discuss Six Sigma.

2 a Consider a project with the following distribution of data and calculate its defect spoilage. **[10]**

SDLC Phase	No. of Defects	Defect Age
Requirement Specs.	34	2
HLD	25	3
LLD	17	7
Coding	10	8

b Explain Agile Testing Life Cycle and its challenges. **[10]**

3 a A program reads three numbers A, B and C, within the range [1,100] and prints the minimum number. Design test cases for this program using BVC and Robust testing methods. **[10]**

b What is the need of software measurement? Discuss the various types of software metrics. **[10]**

4 a What is the need of automation testing activities? Differentiate between static and dynamic tools? **[10]**

b Consider following C code. **[10]**

```
main()
{
   int number, index;
    1. printf("Enter a number");
    2. scanf("%d",&number);
    3. index=2;
    4. while(index<=number-1)
```

```
5.  {
6.      if(number%index==0)
7.      {
8.          printf("Not a prime number");
9.          break;
10.     }
11.   index++;
12. }
13. if(index==number)
14.   printf("prime number");
15. } // end main
```

Draw DD graph, Calculate cyclomatic complexity, List out independent paths and design test cases.

5 a What are the components of a test plan? Illustrate test plan hierarchy with a neat diagram. **[10]**

b Explain McCall's Quality factors and Criteria. **[10]**

6 a Explain a bug life cycle with a neat diagram in detail. List down the states of a bug. **[10]**

B Differentiate between Effective Software Testing and Exhaustive Software Testing. **[10]**

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