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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (IT) (Sem.-7)

**SOFTWARE TESTING AND QUALITY ASSURANCE**

Subject Code : BTIT 701-18

M.Code : 90569

Date of Examination : 13-12-2023

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

1. Write briefly :

- a) What are the limitations of automation?
- b) How are challenges related to automation tracking?
- c) What is integration testing?
- d) What is Malcolm Baldrige model?
- e) What are the advantages and disadvantages of random testing?
- f) Define Software Testing and origin of defects.
- g) Explain debugging.
- h) What is compatibility testing?
- i) Explain role of software quality.
- j) Explain six sigma.

**SECTION-B**

2. What is object-oriented testing? Explain the scenarios when an entirely new method is added to a specialized subclass in term of class testing with the help of suitable example.

3. Justify the following statement: "Functional and non-functional testing can be performed at system and acceptance test levels, while white-box testing is restricted to component and integration testing."
4. What is control flow graph testing? How cyclomatic complexity helps in calculating test cases?
5. Explain quality function deployment. What is the difference between product quality and process quality?
6. What is the software process? Explain with the help of suitable example. Explain PSP and TSP.

### SECTION - C

7. Explain :
  - a) State based testing
  - b) Cause-effect graphing
  - c) TQM.
8. What is data flow testing? Create all occurrences of data variable for data flow testing for the below code(def, c- use, p-use, du paths, dc paths). Evaluate DU pair and path coverage to generate test cases.
  - a) int doSomething (int x, int y)
  - b) {
  - c)                   while(y > 0) {
  - d)                    if(x > 0) {
  - e)                     y = y - x;
  - f)                    } else {
  - g)                     x = x + 1;
  - h)                    }
  - i)                    }
  - j)                    return x + y;
  - k)                    }
9. Explain Clean-room software engineering. Explain CASE tools and their effect on software quality.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**