

Date:

Registration number:

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

**BCA– VI SEMESTER**

**SEMESTER EXAMINATION: APRIL 2022**

**(Examination conducted in July 2022)**

**CA 6318 - Software Testing and Quality Assurance**

Time- 2 ½ hrs Max Marks-70

This question paper contains THREE printed pages and THREE parts

**Part A**

**Answer the following questions (10\*2=20 marks)**

1. What is test case? Give an example.
2. Compare and contrast between Validation and Verification.
3. What is mutation? Define killed and killable mutation.
4. Compare and contrast between Unit testing and Dynamic Testing.
5. What is Debugging and mention approaches of Debugging.
6. What is CFG? Write the different symbols used to draw the CFG.
7. Define two kinds of program errors.
8. What is Interface Error? Explain any two interface errors.
9. What is the ISO 9000 standard? Mention the three components of ISO 9000:2000.
10. Write any two difference between McCall’s quality model and ISO 9126 model

**PART B**

**Answer any five of the following questions (5\*6=30 marks)**

11.What is software testing? Write a 5 key difference between White -Box testing and Black-Box testing.

1. Explain Theory of Weyuker and Ostrand.
2. Describe unit testing in terms of eXtreme programming with neat diagram.
3. Draw a Control Flow Graph for the following Algorithm and write the paths using Statement coverage and branch coverage paths.

 *public static double ReturnAverage(int value[], int AS, int MIN, int MAX){*

 */\* Function: ReturnAverage Computes the average of all those numbers in the input array in*

 *the positive range [MIN, MAX]. The maximum size of the array is AS. But, the array size*

 *could be smaller than AS in which case the end of input is represented by -999. \*/*

 *int i, ti, tv, sum;*

 *double av;*

 *i = 0; ti = 0; tv = 0; sum = 0;*

 *while (ti < AS && value[i] != -999) {*

 *ti++;*

 *if (value[i] >= MIN && value[i] <= MAX) {*

 *tv++;*

 *sum = sum + value[i];*

 *}*

 *i++;*

 *}*

 *if (tv > 0)*

 *av = (double)sum/tv;*

 *else*

 *av = (double) -999;*

 *return (av);*

 *}*

1. Describe data flow anomaly with neat diagram.
2. Explain Top-Down integration technique with neat diagram.
3. Examine how to reduce the number of test vector in functional testing.

**PART C**

**Answer any two of the following questions (2\*10= 20 marks**)

1. What is Static unit testing? Explain steps involved in code review process in the process static unit testing.
2. a) Analyze the interpreted predicate to identify the domain for following CFG.

( 6marks)



 b) Explain any 4 Acceptance criteria in the process of accepting testing. ( 4 marks)

19. a) Briefly explain five levels of maturity and mention the KPAs of each level. ( 5 marks )

 b) Describe the Five views of software quality. (5 marks)