School of Computing Science and Engineering

Bachelor of Technology in Computer Science and Engineering
Summer Term Examination – July - August 2024

Duration : 180 Minutes
Max Marks : 100

Sem V - E2UC502T - Software Testing and Quality Assurance

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	How will you differentiate an error with a defect?	K1(2)
2)	Discuss the features of JUnit testing tool and write the advantages and disadvantages of using Junit for testing.	K2(4)
3)	Explain in detail how the number of faults will be measured using Software Metrics at various levels/phases of software projects.	K2(6)
4)	Let us consider a program that separates integers into positive or negative. And accepts any number between -5 and + 5. Define all the Valid and Invalid Equivalance partitioning for it.	K3(9)
5)	Consider an application that accepts a numeric number as input with a value between 10 to 100 and finds its square. In equivalence class testing what can be various equivalence classes for it? Explain each class.	K3(9)
6)	Assume that as a developer, you created an E-commerce Garments website for Indian citizens that contained a few software bugs. This site consists of User Registration, selecting their desired clothing, putting them to their cart, entering their home address, and ultimately purchasing the goods via the payment gateway system. The payment gateway accepts only COD and UPI. After you've finished developing the system, you should submit it to the tester. In this context, "Do you think Software Bugs will impact the business growth/loss in the Software Industry" - Discuss with end users and testers point of view in terms of reliability, availability, and security.	K5(10)
7)	Assume you created and delivered the Hospital management software product to your client. Which testing approaches will be used after installing the product to assure successive deployment? Discuss the factors for both satisfied and unsatisfied product deployment.	K4(12)
8)	Imagine you are the QA lead for a complex e-commerce platform. Explain a comprehensive test strategy that covers functional, non-functional, and performance testing. Include the types of testing you would prioritize and provide a brief rationale for your choices.	K5(15)

9) Establish a summary of the standard steps in the software testing life cycle, such as defect management, test design, test execution, and test planning.

K5(15)

10) The given program is to implement an absolute letter grading procedure, making suitable assumptions. Let us assume the grading scale as >=90% is Grade 'A', >=80 and <90% is Grade 'B', >=70 and <80 is Grade 'C', >=60 and <70 is Grade 'D', where <60 is supposed to be Grade 'E'. Determine the basis paths and using them derive different test cases, execute these test cases and discuss the test results. Draw only the DD graph and find the Cyclomatic Complexity.

K6(18)

```c
int main()
  {
    float per;
    char grade;
1.      scanf("%f", &per);
2.      if(per>=90)
3.            grade ='A';
4.      else if(per>=80 && per<90)
5.            grade = 'B';
6.      else if(per>=70 && per<80)
7.            grade = 'C';
8.      else if(per>=60 && per<70)
9.            grade = 'D';
10.      else grade = 'E';
11.      switch(grade)
12.      {
13.            case 'A':printf("\n Excellent"); break;
14.            case 'B':printf("\n Very Good"); break;
15.            case 'C':printf("\n Good"); break;
16.            case 'D':printf("\n Above Average"); break;
17.            case 'E':printf("\n Satisfactory"); break;
18.         default: printf("Grade is not correct"); break;
19.      }
20.  printf("\t The percentage=%f and grade is %c",per,grade);
21.  return 0;
  }
```