



Slot: A2+TA2

School of Computer Science Engineering and Information Systems

Winter Semester 2023-2024

Continuous Assessment Test – II

Programme Name & Branch: B. Tech & Information Technology

Course Code & Name: BITE307L & Software Engineering

Class Number (s): VL2023240503983/3927/3924/3919

Faculty Name (Prof): Gunasekaran, Gayathri A, Sweta, Rajeswari C

Exam Duration: 90 Minutes

Maximum Marks: 50

Q.No.	Questions	Max Marks
1	Scenario-1: Web Customer uses some websites to make purchases online. The top level is View Items, Make Purchase and Client Register . View Items use case could be used by the customer as a top-level use case, if the customer only wants to find and see some products. This use case could also be used as a part of the Make Purchase use case. Client Register use case allows customers to register on the website, for example, to get some coupons or be invited to private sales. Draw the sequence diagram for the given scenario.	10
2	Scenario – 2: Online Public Access Catalogue (OPAC) is an e-Library website which is part of the Integrated Library System (ILS), also known as a Library Management System (LMS) and managed by a library or group of libraries. Patrons of the library can search the library catalog online to locate various resources - books, periodicals, audio and visual materials, or other items under the control of the library. Patrons may reserve or renew items, provide feedback, and manage their accounts. Draw the suitable architecture for the given scenario	10
3.	Apply six design concepts that are associated with the product review system (e.g. Amazon) with appropriate diagrams and justifications.	10

4.	Scenario – 2: A printing company is responsible for producing and delivering printed copies ranging from one to 200. The company applies boundary testing by analyzing the extreme ends of the range. The maximum value equals 200, while the minimum value equals one. Therefore, the invalid values include zero and 201. The boundary value tests include testing to ensure that zero and 201 are both invalid and that one and 200 are both valid. Perform boundary value analysis.	10
5.	Consider the given program which to Find Roots of a Quadratic Equation. Draw the Control Flow Graph and Calculate the Cyclomatic complexity using any one method. List all the independent paths and <u>state that whether the program can be considered for testing or not.</u> <pre> #include <math.h> #include <stdio.h> int main() { double a, b, c, discriminant, root1, root2, realPart, imagPart; 1. printf("Enter coefficients a, b and c: "); 2. scanf("%lf %lf %lf", &a, &b, &c); 3. discriminant = b * b - 4 * a * c; 4. if (discriminant > 0) 5. { 6. root1 = (-b + sqrt(discriminant)) / (2 * a); 7. root2 = (-b - sqrt(discriminant)) / (2 * a); 8. printf("root1 = %.2lf and root2 = %.2lf", root1, root2); 9. } 10. else if (discriminant == 0) 11. { 12. root1 = root2 = -b / (2 * a); 13. printf("root1 = root2 = %.2lf", root1); 14. } 15. else 16. { 17. realPart = -b / (2 * a); 18. imagPart = sqrt(-discriminant) / (2 * a); 19. printf("root1 = %.2lf+%.2li and root2 = %.2f-%.2li", realPart, imagPart, realPart, imagPart); 20. } 21. return 0; 22. } </pre>	10