Reg. No: _____

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. / B. Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, MAY/JUNE 2024

Department of Computer Science and Engineering
Semester VI, VIII

CS6021 Software Testing and Quality Assurance

(R 2018)

Time: 3 hrs. Max. Marks: 100

CO 1	To understand the basics of software quality
CO 2	To learn and apply the metrics related to software quality
CO 3	To emphasize the importance of testing in SDLC
CO 4	To differentiate the test case view for functional and structural testing
CO 5	To gain insight into automation

BL – Bloom's Taxonomy Levels

(L1 - Remembering, L2 - Understanding, L3 - Applying, L4 - Analyzing, L5 - Evaluating, L6 - Creating)

PART- A (10x2=20Marks)

(Answer all Questions)

Q. No	Questions	Marks	CO	BL
1	Differentiate errors, faults and failure with examples.	2	CO1	L2
2	List the different types of reviews.	2	CO1	L1
3	Write the limitations of software quality metrics.	2	CO2	L1
4	Define: coupling, cohesion.	2	CO2	L1
5	Draw the testing life cycle.	2	CO3	L6
6	Differentiate functional testing and structural testing.	2	CO3	L1
7	Mention the types of testing.	2	CO5	L1
8	Give examples for a test case and a use case.	2	CO4	L2
9	Define regression testing.	2	CO4	L1
10	What is meant by object oriented testing?	2	CO5	L1

PART- B (8x8=64 Marks)

(Answer any 8 questions)

Q. No	Questions	Marks	CO	BL
11.	Discuss the factors in each of three categories belonging to McCall's factor model.	8	CO1	L1
12.	Elaborate on the elements of the development plan.	8	CO1	L1
13.	Consider the case of custom-made software package developed by a supplier according to the unique Request for Proposal (RFP) specifications of the customer. (a) What proprietary issued are expected in such a project? (b) What security issues related to the proprietary rights listed in your answer (a) should be examined?	4+4	CO2	L4
14.	Draw and explain the formal design review process.	8	CO2	L1
15.	With neat diagram explain the process of defining software quality metrics.	8		
16.	Assume estimated lines of code of a system is: 33,200 LOC.	8	CO2	L3

	Average productivity for system of this type is: 620 LOC/person-month. Number of developers: 6 Labor rate is: $ 800 per person-month Calculate the total effort and cost required to complete the above project.			
17.	What is a bug? Discuss the Taxonomy of bugs.	8	CO3	L3
18.	Illustrate the stages of SDLC and explain the levels of testing.	8	CO3	L2
19.	Explain the salient features of any two Test automation tools.	8	CO5	L2
20.	What is Cost-Benefit Analysis? Explain its steps, advantages and disadvantages	8	CO4	L2
21.	Discuss about the Selection, minimization and prioritization of test cases for regression testing.	8	CO4	L2
22.	Discuss the activities of testing an online shopping web application.	8	CO5	L3

PART- C (2x8=16 Marks)

(Both are compulsory)

Q. No	Questions	Marks	CO	BL
23.	Analysis of the requirement specifications for a tender for development of a CRM system has been publicized in a professional journal. ABC software Labs is considering participating in the tender. The team appointed to prepare the tender analysed its requirement specifications and obtained the following results: • Number of inputs – 28 • Number of outputs – 36 • Number of user online queries – 24 • Number of logical files – 8 • Number of external interfaces – 12 The team estimated that 50% of the components are simple. 25% average and 25% complex. The team also evaluated the project's complexity, with an estimated RCAF=57. (1) Compute the function points estimates of the project. (2) Mr. X, the Chief Programmer, estimated that 3500 lines of C++ code will be required for the project. Based on the result for **(1)**, do you agree with the estimate?	5+3	CO2	L5

24.	i = 0;
	while (i<n-1) do
	j = i + 1;
	while (j<n) do
	if A[i]<A[j] then
	swap(A[i], A[j]);
	end do;
	i=i+1;
	end do;
	For the code given above, draw the flow graph and calculate the cyclomatic complexity.
		8	CO2	L5, L6