MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

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Rasipuram - 637 408, Namakkal Dist., Tamil Nadu.

Estd. 2000

IQAC

MUST KNOW CONCEPTS

MKC

MCA

2021-22

Course Code & Course Name : 19CAC21- Software Testing & Quality Assurance

Year/Sem/Sec : II / III / -

S.No	Term	Notation (Symbol)	Concept/Definition/Meaning/Units/Equation/ Expression	Units
Unit-I : Testing Techniques & Test Case Design				
1	Software	--	It is a set of instructions, data or programs used to operate computers and execute specific tasks.	I
2	Testing	--	Testing is an investigation conducted to provide stakeholders with information about the quality of the software product or service under test.	I
3	Bug	--	It is the informal name of defects, which means that s/w is not working as per the requirement.	I
4	Error	--	An error describes any issue that arises unexpectedly that causes a computer to not function properly.	I
5	Fault	--	It is the incorrect step or process due to which the program or the software behaves in an unintended manner.	I
6	Failure	--	A failure is a term used to describe an issue with the computer or a device that prevents it from functioning properly.	I
7	White Box Testing	--	It is software testing technique in which internal structure, design and coding of software are tested to verify flow of input-output and to improve design, usability and security.	I
8	Black Box Testing	--	It is a method of software testing that examines the functionality of an application without peering into its internal structures or workings.	I
9	Static Testing	--	A software testing technique in which the software is tested without executing the code.	I
10	Structural Testing	--	Structural testing is the type of testing carried out to test the structure of code	I
11	Random Testing	--	It is a black-box software testing technique where programs are tested by generating random, independent inputs.	I
12	Boundary Value Analysis	--	It is a software testing technique in which tests are designed to include representatives of boundary	I

			values in a range.	
13	Decision Table	--	A decision table is a good way to deal with different combination inputs with their associated outputs.	I
14	Equivalence Class Partioning	--	Intersection of human resources and information technology through HR software Equivalence Class Partioning	I
15	Cause-Effect Graph	--	It is a technique in which a graph is used to represent the situations of combinations of input conditions.	I
16	Error Guessing	--	Error guessing is a test method in which test cases used tofind bugs in programs are established based on experience in prior testing.	I
17	Compatibility Testing	--	Testing the application in a same environment but having different versions.	I
18	User Documentation	--	User documentation refers to the documentation for a product or service provided to the end users.	I
19	Domain Testing	--	It is a software testing process in which the application is tested by giving a minimum number	I
20	Test Case	--	It is a set of actions performed on a system to determine if it satisfies software requirements and functions correctly. .	I
21	Test Suite	--	Test suite is a container that has a set of tests which helps testers in executing and reporting the test execution status.	I
22	Functional Testing	--	It validates the software system against the functional requirements/specifications.	I
23	Test Adequacy Criteria	--	A test adequacy criterion is a predicate that is true or false of a pair.	I
24	Path	--	It is a structural testing method based on the source code or algorithm and NOT based on the specifications.	I
25	Coverage Testing	--	Test coverage helps monitor the quality of testing, and assists testers to create tests that cover areas that are missing or not validated.	I
Unit-II : Levels Of Testing				
26	Programmer	--	A programmer is an individual that writes/creates computer software by giving the computer specific programming instructions.	II
27	Plan	--	It lays out the overall objective and scope of the tests to be run.	II
28	Design	--	Software design is the process of envisioning and defining software solutions to one or more sets of problems.	II

29	Test Harness	--	It is a collection of stubs, drivers and other supporting tools required to automate test execution.	II
30	Unit Test	--	Unit test is a way of testing a unit - the smallest piece of code that can be logically isolated in a system.	II
31	Integration Test	--	Integration testing is the phase in software testing in which individual software modules are combined and tested as a group.	II
32	Acceptance Test	--	The purpose of this test is to evaluate the system's compliance with the business requirements and assess whether it is acceptable for delivery	II
33	Performance Test	--	Performance Testing is a type of software testing that ensures software applications to perform properly under their expected workload.	II
34	Regression Test	--	Regression Test is defined as a type of software testing to confirm that a recent program or code change has not adversely affected existing features.	II
35	Internationalization Test	--	Internationalization testing is the process of verifying the application under test to work uniformly across multiple regions and cultures.	II
36	Alpha Test	--	Alpha Testing is a type of software testing performed to identify bugs before releasing the software product to the real users or public.	II
37	Beta Test	--	A beta test is a type of trial period for a computer product prior to a commercial or official release.	II
38	Smoke Test	--	Smoke Testing is a software testing process that determines whether the deployed software build is stable or not.	II
39	OO Test	--	The object-oriented paradigm is gaining popularity because of its benefits in analysis, design, and coding.	II
40	Usability Test	--	Usability testing, a non-functional testing technique that is a measure of how easily the system can be used by end users	II
41	Accessibility Test	--	Accessibility testing is the practice of making your web and mobile apps usable to as many people as possible.	II
42	Website Test	--	Web testing is the name given to software testing that focuses on web applications	II
43	Scenario Test	--	It is a software testing activity that uses scenarios: hypothetical stories to help the tester work through a complex problem or test system	II
44	Case Study	--	It is a detailed study of a specific subject, such as a person, group, place, event, organization, or phenomenon.	II
45	Forward Compatibility Test	--	It is a process to verify the behavior and compatibility of the developed hardware or	II

			software with the newer versions of the hardware or software.	
46	Backward Compatibility Test	--	It is a technique to verify the behavior and compatibility of the developed hardware or software with their older versions of the hardware or software.	II
47	End User	--	An end user is the person that a software program or hardware device is designed for.	II
48	Requirement	--	Software requirements are a field within software engineering that deals with establishing the needs of stakeholders that are to be solved by software.	II
49	Record Test	--	It involves keeping good records of the test activities that you have carried out.	II
50	Tester	--	A tester is a person who has been asked to test a particular thing	II
Unit-III : Testing For Specialized Environment				
51	Client	--	A client is a computer program that depends upon another program to function.	III
52	Server	--	A server is a computer or system that provides resources, data, services, or programs to other computers	III
53	Multi- Platform	--	If a software program is developed for multiple operating systems, it is considered to be "multiplatform."	III
54	Environment	--	Environment refers to the collection of hardware and software tools a system developer uses to build software systems.	III
55	Object	--	An object is a software bundle of variables and related methods.	III
56	Class	--	A software blueprint for objects is called a class	III
57	Method	--	A method in object-oriented programming is a procedure associated with a message and an object.	III
58	Inheritance	--	The capability of a class to derive properties and characteristics from another class	III
59	Polymorphism	--	Polymorphism means "many forms", and it occurs when we have many classes that are related to each other by inheritance.	III
60	Encapsulation	--	Encapsulation is defined as the wrapping up of data under a single unit.	III
61	Interface	--	An interface is a shared boundary across which two or more separate components of a computer system exchange information.	III
62	Web	--	The Web is the common name for the World Wide Web, a subset of the Internet consisting of the pages that can be accessed by a Web browser.	III
63	Web Technology	--	Web technology is the mechanism which enables two of computer devices to communicate over a network’s maturation.	III

64	Traditional Software	--	It is the software development process used to design and develop the simple software.	III
65	Web Based Software	--	Web based software is a software that runs on a server, while users connect to it from their computers using an Internet browser.	III
66	Quality	--	It is the degree of conformance to explicit or implicit requirements and expectations.	III
67	Web Engineering	--	Web engineering is basically all about designing and promoting web-based systems.	III
68	Web Application	--	A Web application is an application program that is stored on a remote server and delivered over the Internet through a browser interface.	III
69	Operating System	--	It is software that communicates with the hardware and allows other programs to run.	III
70	Database	--	A database is an organized collection of data, generally stored and accessed electronically from a computer system.	III
71	Middleware	--	It is a more effective program that acts as bridge in between various applications and other databases otherwise tools.	III
72	Network	--	Network is a set of computers sharing resources located on or provided by network nodes.	III
73	Internet	--	The Internet is a vast network that connects computers all over the world.	III
74	Browser	--	A web browser takes you anywhere on the internet, letting you see text, images and video from anywhere in the world.	III
75	Web Page	--	A webpage is a document, commonly written in HTML that is viewed in an Internet browser.	III
Unit-IV :Test Automation				
76	Automation	--	It makes use of specialized tools to control the execution of tests and compares the actual results against the expected result.	IV
77	Installation	--	Installation refers to the particular configuration of a software hardware with a view to making it usable with the computer	IV
78	Tools	--	Software tool is a set of computer programs that are used by the developers to create, maintain, debug, or support other applications and programs	IV
79	Techniques	--	Software techniques are methods for designing, developing, documenting, and maintaining programs	IV
80	Bug	--	It is referred to as a failure or a flaw in the software program.	IV
81	Debugging	--	Debugging is defined as a process of analyzing and removing the error.	IV
82	Architecture	--	Software architecture refers to the fundamental structures of a software system and the discipline of creating such structures and systems.	IV

83	Tracking	--	Tracking software is software installed in an electronic device that is capable of reporting the device's location remotely.	IV
84	Scope	--	Scope refers to the combined objectives and requirements needed to complete a project.	IV
85	Skills	--	Person knowledge and abilities in different types of software	IV
86	Selecting	--	To recognize the need and begin your internal planning and budgeting. .	IV
87	Grey Box Testing	--	Gray-box testing is a combination of white-box testing and black-box testing.	IV
88	Behavioral Testing	--	It is the testing of software solution internal code and infrastructure	IV
89	Glass Box Testing	--	Glass box testing is a testing technique that examines the program structure and derives test data from the program logic/code.	IV
90	Database Testing	--	Database Testing is a type of software testing that checks the schema, tables, triggers, etc. of the Database under test.	IV
91	Exhaustive Testing	--	Exhaustive testing is a test approach in which all possible data combinations are used for testing.	IV
92	Big-Bang Approach	--	Big Bang Integration Testing is an approach in which all software components are combined at once and make a complicated system	IV
93	Software Requirement Specification	SRS	A SRS is a description of a software system to be developed.	IV
94	Developer	--	It means more than just designing or writing the software, it usually means someone who manages the project,	IV
95	Cyclomatic Complexity	--	Cyclomatic complexity is a software metric used to indicate the complexity of a program	IV
96	Repair	--	Computer repair is the process of identifying, troubleshooting and resolving problems and issues in a faulty computer	IV
97	Rework	--	Rework is the effort required to fix the software defects identified during system testing	IV
98	Inspection	--	Inspection in software engineering refers to peer review of any work product by trained individuals who look for defects using a well-defined process.	IV
99	Formal Technical Review	--	Software quality control activity performed by software engineers.	IV
100	Peer Interview	--	In a peer interview, the candidate sits down with other employee of the company.	IV
Unit-V : Software Testing and Quality Metrics				
101	Six-Sigma	--	Six Sigma is the process of producing high and improved quality output.	V
102	TQM	--	It describes a management approach to long-term success through customer satisfaction.	V
103	Challenges	--	A call to someone to participate in a competitive situation or fight to decide who is superior in	V

			terms of ability or strength.	
104	Defect Removal Effectiveness	DRE	DRE gives a measure of the development team ability to remove defects prior to release.	V
105	Failure Modes and Effects Analysis	FMEA	FMEA is a proactive approach to defect prevention and can be applied to Software development process.	V
106	Taguchi Quality Loss Function	--	Taguchi is the loss imparted to the society by the product from the time the product is designed to the time it is shipped to the customer	V
107	Cost	--	Cost estimation is the process of predicting the effort required to develop a software system.	V
108	Metrics	--	Software metric is a measure of software characteristics which are quantifiable or countable.	V
109	Measurement	--	Software measurement is a quantified attribute of a characteristic of a software product or the software process.	V
110	Cost of Quality	--	It is a measure that quantifies the cost of control/conformance and the cost of failure of control/non-conformance. .	V
111	House of Quality	--	It is a matrix that aligns the customer needs, the design features and the customer	V
112	Sanity Testing	--	Testing technique which determines if a new software version is performing well enough to accept it for a major testing effort.	V
113	Models	--	Models are forms of description often adopted in software development.	V
114	Top Down	--	In a top-down approach an overview of the system is formulated, specifying, but not detailing, any first-level subsystems.	V
115	Bottom Up	--	It is the piecing together of systems to give rise to more complex systems, thus making the original systems sub-systems of the emergent system.	V
116	Test Data	--	Test data isequallyimportantto software developm ent, as your data will decide the testing methods, like positive or negative.	V
117	Standard	--	A technical standard is an established norm or requirement for a repeatable technical task.	V
118	Walkthrough	--	Author describes and explain work product in a informal meeting to his peers or supervisor to get feedback.	V
119	Selenium	--	Selenium is a free automated testing suite for web applications across different browsers and platforms.	V
120	Quality Assurance	--	It is a process which assures that all software engineering processes, methods, activities and work items	V
121	CMM	--	It is a methodology used to develop and refine an organization's software development process.	V
122	Prototypes	--	Prototype is an early sample, model, or release of a product built to test a concept or process	V

123	Verification	--	It is a discipline of software engineering whose goal is to assure that software fully satisfies all the expected requirements.	V
124	Validation	--	It is a dynamic mechanism of testing and validating if the software product actually meets the exact needs of the customer or not.	V
125	Project Manager	--	Project managers have the responsibility of the planning, procurement and execution of a project,	V
Placement Questions				
126	Usability Testing	--	Usability testing is the practice of testing how easy a design is to use with a group of representative users.	
127	Security Testing	--	It is a type of Software Testing that uncovers vulnerabilities, threats, risks in a software application and prevents malicious attacks from intruders.	
128	Risk	--	It is an expectation of loss, a potential problem that may or may not occur in the future.	
129	Quality Function Development	QFD	Quality function deployment (QFD) is the translation of user requirements and requests into product designs.	
130	Methodology	--	A methodology provides a logical and systematic means of proceeding with the design process as well as a set of guidelines for decision-making.	
131	Report	--	It is a document that conveys specific information about your business to other individuals those can be investors, employees, managers or other superior.	
132	Audit	--	A software audit is an internal or external review of a software program to check its quality, progress or adherence to plans, standards and regulations.	
133	Formal Review	--	It is a review that characterized by documented procedures and requirements. ..	
134	Task	--	A task set is a collection of software engineering work tasks, milestones, and deliverables that must be accomplished to complete a particular project.	
135	Baselines	--	It is a reference point in the software development life cycle marked by the completion and formal approval of a set of predefined work products.	
136	Process	--	A software process model is an abstraction of the actual process, which is being described.	
137	Problems	--	A problem definition is an explicit, written statement of a problem: the gap between the current state and the desired state.	
138	Quality Control	--	Testing is a systematic set of processes used to ensure the quality of software products or services.	
139	Quality Planning	--	Itdefines the quality requirements of software and describes how these are to be assessed.	

140	SQA Team	--	It is a set of activities for ensuring quality in software engineering processes.	
141	Project Leader	--	project leaders are also known as scrums masters and development sprint lead	
142	Mean Time Between Failure	MTBF	MTBF is the average time between system breakdowns.	
143	Forecasting	--	Forecasting is a technique of predicting the future based on the results of previous data.	
144	Response time	--	Response time is the total time it takes from when a user makes a request until they receive a response.	
145	Testware	--	"Testware" is a term used to describe all of the materials used to perform a test.	
146	Build	--	Build is the process of converting source code files into standalone software artifact(s) that can be run on a computer, or the result of doing so.	
147	Release	--	A software release may be either public or private and generally constitutes the initial generation of a new or upgraded application	
148	Test Strategy	--	A test strategy is an outline that describes the testing approach of the software development cycle.	
149	Load Testing	--	It is defined as a type of software testing that determines a system's performance under real-life load conditions.	
150	Stress Testing	--	Stress Testing is a type of software testing that verifies stability & reliability of software application.	

Faculty Prepared **Signature**

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HoD