Printed Page:-03 **Subject Code**:- **ACSE0603**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)
B.Tech
SEM: VI - THEORY EXAMINATION (2024 - 2025)
Subject: Software Engineering

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* ***three Sections -A, B, & C.*** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION-A 20

1. Attempt all parts:-

1-a. First step in the software development lifecycle. (CO1,K1) 1

(a) System Design
(b) Coding
(c) System Testing
(d) Preliminary Investigation and Analysis

1-b. The name of the approach that follows step-by-step instructions for solving a problem. (CO1,K2) 1

(a) An Algorithm
(b) A Plan
(c) A List
(d) Sequential Structure

1-c. Requirements elicitation means - (CO2,K2) 1

(a) Gathering of requirements
(b) Capturing of requirements
(c) Understanding of requirements
(d) All of the above

1-d. SRS stands for - (CO2,K1) 1

(a) Software requirements specification
(b) System requirements specification

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(c) Systematic requirements specifications

(d) None of the above

1-e. Software Design consists of _____ (CO3,K2) 1

(a) Software Product Design

(b) Software Engineering Design

(c) Software Product & Engineering Design

(d) None of the mentioned

1-f. _____ is a measure of the degree of interdependence between modules. (CO3,K2) 1

(a) Cohesion

(b)) Coupling

(c) None of the mentioned

(d) All of the mentioned

1-g. Software testing is: (CO4,K2) 1

(a) The process of demonstrating the errors are not present

(b) The process of establishing confidence that a program does what it is supposed to do

(c) The process of executing the program to show that it is working as per specification

(d) The process of executing the program with the intent of finding errors

1-h. Verification is: (CO4,K2) 1

(a) Checking the product with respect to customer's expectation

(b) Checking the product with respect to specifications

(c) Checking the product with respect to the constraints of the project

(d) All of the above

1-i. Perfective maintenance refers to enhancements: (CO5,K3) 1

(a) Making the product better

(b) Making the product faster and smaller

(c) Making the product with new functionalities

(d) All of the mentioned

1-j. COCOMO cost model. (CO5,K2) 1

(a) It takes project, product hardware and personnel attributes into account when formulating a cost estimate.

(b) In it server provides set of services and set of clients uses these services.

(c) Extent to which standards are used to achieve interoperability.

(d) None of these

2. Attempt all parts:-

2.a. Discuss the difference between Verification and Validation? (CO1,K2) 2

2.b. Define software prototyping. (CO2,K2) 2

2.c. Explain sequence diagram. (CO3,K2) 2

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2.d.	Define Test suite. (CO4,K2)	2
2.e.	The modification of the software to match changes in the ever changing environment, falls under which category of software maintenance. (CO5,K2)	2

SECTION-B 30

3. Answer any five of the following:-

3-a.	Describe which is more important-the product or process. Justify your answer. (CO1,K3)	6
3-b.	Explain the difference and similarity between Agile and Scrum. (CO1,K2)	6
3-c.	Explain SRS structure and its parts. (CO2,K2)	6
3-d.	Explain how SRS is used during software development. (CO2,K2)	6
3.e.	Explain various techniques for Software measurement. (CO3,K3)	6
3.f.	Explain why does software testing needs extensive planning. (CO4,K3)	6
3.g.	Explain re-engineering in detail. (CO5,K3)	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	Explain why a software system that is used in a real-world environment must change or become progressively less useful. (CO1,K2)	10
4-b.	Explain the term prototype and under what circumstances is it beneficial to construct a prototype. Does the construction of prototype always increase the overall cost of software development. (CO1,K3)	10

5. Answer any one of the following:-

5-a.	Explain importance of SRS Document. Also explain the IEEE standard of SRS. (CO2,K3)	10
5-b.	Explain the types of feasibility in brief. (CO2,K3)	10

6. Answer any one of the following:-

6-a.	Explain various types of coupling for software design with examples. (CO3,K3)	10
6-b.	Define the purpose of collaboration diagram in Object Oriented Design with an example. (CO3,K2)	10

7. Answer any one of the following:-

7-a.	Differentiate between Regression testing and Re-testing. (CO4,K3)	10
7-b.	Explain the different types of black box testing. (CO4,K3)	10

8. Answer any one of the following:-

8-a.	Explain why according to the COCOMO model, when the size of a software is increased by two times,the time to develop the product usually increases by less than two times. (CO5,K3)	10
8-b.	Explain a milestone in software development. Why is it considered helpful to have milestone in software development. (CO5,K3)	10