Printed Page:-04 **Subject Code:- AIT0401**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: IV - THEORY EXAMINATION (2023- 2024)

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. A V-model is a SDLC model and called as V-model because of its (CO1) 1

(a) Shape

(b) Size

(c) Model

(d) cost

1-b. The _____ and _____ are the two major dimensions encompassed in the Spiral model.(CO1) 1

(a) Diagonal, Perpendicular

(b) Perpendicular, Radial

(c) Angular, diagonal

(d) Radial, Angular

1-c. FAST stands for : (CO2) 1

(a) Facilitated Application Specification Technique

(b) Functional Application Specification Technique

(c) Fast Application Specification Technique

(d) First Application Specification Technique

1-d. Software development's last phase "Maintenance" is related to - (CO2) 1

(a) Problem statement & Product design

(b) Problem statement

(c) Product design

(d) None of the above

1-e. Prototypes are: (CO3) 1

(a) Prototypes is a working model of part or all of a final product

(b) Prototypes does not represent any sort of models

(c) Prototype can never consist of full size

(d) All of the mentioned

1-f. Temporal cohesion means: (CO3) 1

(a) Cohesion between temporary variables

(b) Cohesion between local variable

(c) Cohesion with respect to time

(d) Coincidental cohesion

1-g. Boundary value analysis belong to _____ (CO4) 1

(a) White Box Testing

(b) Black Box Testing

(c) White Box & Black Box Testing

(d) Regression Testing

1-h. Testing of software with actual data and in the actual environment is called: (CO4) 1

(a) Alpha Testing

(b) Beta Testing

(c) Regression Testing

(d) Stress Testing

1-i. In how many categories software Maintenance is classified - (CO5) 1

(a) 2

(b) 3

(c) 4

(d) 5

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1-j. As per distribution of maintenance effort, which type of maintenance has consumed maximum share: (CO5) 1

(a) Adaptive

(b) Corrective

(c) Perfective

(d) Preventive

2. Attempt all parts:-

2.a. Name the phase which is defined as "The concept is explored and refined, and the client's requirements are elicited". Justify your answer. (CO1) 2

2.b. State the importance of Requirement analysis phase. (CO2) 2

2.c. Define function oriented design. (CO3) 2

2.d. Explain bottom-up testing strategy briefly. (CO4) 2

2.e. State the objective of software maintenance. (CO5) 2

SECTION B **30**

3. Answer any <u>five</u> of the following:-

3-c. Compare Interviews and Brainstorming session as requirement elicitation techniques of a software. (CO2) 6

3-a. Discuss the steps in Waterfall model. (CO1) 6

3-d. Define : a) Known requirements b) Unknown requirements c) undreamt requirements.(CO2) 6

3-b. Describe prototype model in detail. (CO1) 6

3.e. Explain various techniques for Software measurement. (CO3) 6

3.f. Mention the reason why does a software fail if it has passed all the testing phases. Is unit test sufficient for all the software. (CO4) 6

3.g. Briefly explain the main differences between various modes based on project size in COCOMO estimation model. (CO5) 6

SECTION C **50**

4. Answer any <u>one</u> of the following:-

4-a. Elaborate on how the use of software engineering principles helps to develop software products cost-effectively and timely. (CO1) 10

4-b. Discuss the major advantages of the object-oriented design (OOD) methodologies over the data flow-oriented design methodologies. (CO1) 10

5. Answer any <u>one</u> of the following:-

5-a.	Design DFD 0-level, 1-level, 2-level for Online shopping System. (CO2)	10
5-b.	Describe requirement engineering process in detail and its methods. (CO2)	10

6. Answer any <u>one</u> of the following:-

6-a.	Explain Object oriented Design approach with example. (CO3)	10
6-b.	Define Object Oriented technique. Explain the aspects of object oriented approach. (CO3)	10

7. Answer any <u>one</u> of the following:-

7-a.	Elaborate Acceptance testing. Discuss the importance of Acceptance testing in detail. (CO4)	10
7-b.	Illustrate the independent path in a path graph of a program by using a suitable example. (CO4)	10

8. Answer any <u>one</u> of the following:-

8-a.	Explain maintenance. Discuss its 4 types in detail. (CO5)	10
8-b.	Explain project size. What are the popular matrices to measure project size. How can the size of a project be estimated during the project planning stage. How can you size of a project be estimated during the project planning stage. (CO5)	10