Printed Page:- 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 (2021 - 2022)

Subject: Software Engineering

Time: 3 Hours Max. Marks: 100

General Instructions:

1. The question paper comprises three sections, A, B, and C. You are expected to answer them as directed.
2. Section A - Question No- 1 is 1 marker & Question No- 2 carries 2 mark each.
3. Section B - Question No-3 is based on external choice carrying 6 marks each.
4. Section C - Questions No. 4-8 are within unit choice questions carrying 10 marks each.
5. 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. Agile Software Development is based on which of the following type? (CO1) 1

(a) Iterative Development

(b) Incremental Development

(c) Both Incremental and Iterative Development

(d) Linear Development

1-b. In which step of SDLC actual programming of software code is done? (CO1) 1

(a) Development and Documentation

(b) Maintenance and Evaluation

(c) Design

(d) Analysis

1 Which of the following is involved in the system planning and designing phase of the Software Development Life Cycle (SDLC)? (CO2) 1

(a) Sizing

(b) Parallel run

(c) Specification freeze

(d) All of the above

1 The process to gather the software requirements from client, analyze and document them is known as _____ (CO2) 1

(a) Feasibility Study

(b) Requirement Gathering

(c) Requirement Engineering

(d) System Requirements Specification

1-e. The extent to which different modules are dependent upon each other is called (CO3) 1

(a) Coupling

(b) Cohesion

(c) Modularity

(d) Stability

1-f. The worst type of cohesion is. (CO3) 1

(a) Coincidental Cohesion

(b) Temporal Cohesion

(c) Logical Cohesion

(d) Sequential Cohesion

1-g. Functional Testing is known as: (CO4) 1

(a) Structural Testing
(b) Behaviour Testing
(c) Regression Testing
(d) None of the above

1-h. A decision table has: (CO4) 1

(a) Four Potions
(b) Three Potions
(c) Five Potions
(d) Two Potions

1-i. Maintenance is classified into how many categories ? (CO5) 1

(a) two
(b) three
(c) four
(d) five

1-j. Which of the following is not part of the Test document? (CO5) 1

(a) Test Case
(b) Requirements Traceability Matrix [RTM]
(c) Test strategy
(d) Project Initiation Note [PIN]

2. Attempt all parts:-

2.a. Which SDLC model is chosen if the development team has less experience on similar projects ?(CO1) 2

2.b. What is FAST? (CO2) 2

2.c. Differentiate between inheritance and generalization. (CO3) 2

2.d. Throw some light on CMM. (CO4) 2

2.e. Which risks are derived from the organizational environment where the software is being developed? (CO5) 2

SECTION B 30

3. Answer any five of the following:-

3-a. difference between iterative model and classical waterfall model. (CO1) 6

3-b. What is spiral model with example? (CO1) 6

3-c. Discuss the significance and use of requirement engineering phase in a software. What are the problems in formulation of requirements? (CO2) 6

3-d. Draw a 0-level and 1-level DFD for a library management system. (CO2) 6

3.e. Draw and explain activity diagram for online food order management system. (CO3) 6

3.f. Discuss the difference between worst test case and adhoc test case performance evaluation by means of testing. How can we be sure that the real worst case has actually been observed? (CO4) 6

3.g. What is reverse engineering? Discuss levels of reverse engineering. (CO 5) 6

SECTION C 50

4. Answer any one of the following:-

4-a. Explain with two examples of software development projects would be amenable to evolutionary prototyping. Why is evolutionary prototyping suitable in these cases? (CO1) 10

4-b. Explain briefly about the following (i) business process engineering (ii) product engineering. (CO1) 10

5. Answer any one of the following:-

5-a. What do you mean by data dictionary and decision table? Explain with an example. (CO2) 10

5-b. Explain the feasibility studies. What are the outcomes? Does it have either implicit or explicit effects on software requirement collection? (CO2) 10

6. Answer any one of the following:-

6-a. Consider a project the following functional units: No. of user input = 50, No. of user output = 40, No. of enqueries = 35, No. of user file = 06, No. of external interface = 04. Assume all the complexity adjustment fator and weighting factor are average. Compute the Functional Points for the given Project. (CO3) 10

6-b. Design and explain class diagram for COVID Vaccinations System. (CO3) 10

7. Answer any one of the following:-

7-a. Why is it so important to include boundary values in your black-box test data? Illustrate with examples in which a test suite developed using black box techniques might give the impression that ‘everything is OK”, while a test suite developed with whit box testing techniques (for example, branch coverage) might uncover a fault and vice versa. (CO4) 10

7-b. Discuss the relative merits of ISO-9001 certification and the SEI CMM based evaluation. Point out some of the shot comings of the ISO-9001 certification process as applied to the software industry. (CO4) 10

8. Answer any one of the following:-

8-a. What are the different categories of software are development projects according to the COCOMO estimation model ? Give an example of software product development projects belonging to each of these categories. (CO5) 10

8-b. What is the baseline in the context of software configuration management ? Explain how a baseline can be updated to form a new base line ? (CO5) 10