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Subject Code:- ACSE0603

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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: VI - THEORY EXAMINATION (2022-2023)

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. | What is the first step in the software development lifecycle? CO1 | 1 |
| | (a) System Design | |
| | (b) Coding | |
| | (c) System Testing | |
| | (d) Preliminary Investigation and Analysis | |
| 1-b. | What is the major drawback of the Spiral Model? (CO1) | 1 |
| | (a) Higher amount of risk analysis | |
| | (b) Doesn't work well for smaller projects | |
| | (c) Additional functionalities are added later on | |
| | (d) Strong approval and documentation control | |
| 1-c. | Requirements review process is carried out to (CO2) | 1 |
| | (a) Spend time in requirements gathering | |
| | (b) Improve the quality of SRS | |
| | (c) Document the requirements | |

- (d) None of the above
- 1-d. Which of the following standard is successor of Capability Maturity Model? (CO2) 1
- (a) ISO 9000
 - (b) ISO 9000 - 2000
 - (c) PSP
 - (d) CMMI
- 1-e. Which of the following is/are type of module cohesion? CO3 1
- (a) Logical
 - (b) Temporal
 - (c) Control
 - (d) Stamp
- 1-f. The worst type of coupling is (CO3) 1
- (a) Content
 - (b) Common
 - (c) External
 - (d) Data Cupling
- 1-g. Alpha testing is done by: (CO4) 1
- (a) Customer
 - (b) Tester
 - (c) Developer
 - (d) All of the above
- 1-h. Acceptance testing is done by: (CO4) 1
- (a) Developers
 - (b) Customers
 - (c) Testers
 - (d) All of the above
- 1-i. BPR stands for (CO5) 1
- (a) Business process re-engineering
 - (b) Business product re-engineering
 - (c) Business process requirements
 - (d) None of the mentioned
- 1-j. Fan-out is referred to (CO5) 1

- (a) It is a measure of number of function that calls some other function.
- (b) It is measure of number of functions that are called by a function.
- (c) In it server is only responsible for data management.
- (d) None of these

2. Attempt all parts:-

- | | | |
|------|---|---|
| 2.a. | Discuss the difference between Verification and Validation? (CO1) | 2 |
| 2.b. | Explain Entity-Relationship Diagrams. (CO2) | 2 |
| 2.c. | Design the structure of a class in UML? (CO3) | 2 |
| 2.d. | Differentiate between Black box and white box testing techniques. (CO4) | 2 |
| 2.e. | Explain what are legacy systems? (CO5) | 2 |

SECTION B

30

3. Answer any five of the following:-

- | | | |
|------|--|---|
| 3-a. | Explain all the phases of SDLC. (CO1) | 6 |
| 3-b. | Explain the terms: Scrum Sprint, Scrum Team, Scrum Master and Product Owner. (CO1) | 6 |
| 3-c. | What minimum features are required to be present in a good SRS? (CO2) | 6 |
| 3-d. | Draw a detailed data flow diagram for library management system. (CO2) | 6 |
| 3.e. | What do you mean by cohesion and coupling in the context of software design? How are these concepts useful in arriving at a good design of a system? (CO3) | 6 |
| 3.f. | Discuss the limitations of testing. Why do we say that complete testing is impossible? (CO4) | 6 |
| 3.g. | Describe two metrics which are used to measure the software in detail. (CO5) | 6 |

SECTION C

50

4. Answer any one of the following:-

- | | | |
|------|---|----|
| 4-a. | 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) | 10 |
| 4-b. | Explain the term Scrum Master. What are the responsibilities of Scrum Master and Product Owner? (CO1) | 10 |

5. Answer any one of the following:-

- | | | |
|------|--|----|
| 5-a. | Draw an E-R diagram for university information system. Specify at least four cardinality and modality relationships in this. (CO2) | 10 |
| 5-b. | Explain the feasibility studies. What are the outcomes? Does it have implicit or | 10 |

explicit effects on software requirement collection.(CO2)

6. Answer any one of the following:-

- 6-a. Design and explain Sequence diagram for Phone call Management System. (CO3) 10
- 6-b. Explain Object oriented Design approach with example. (CO3) 10

7. Answer any one of the following:-

- 7-a. Why is boundary value analysis such a powerful technique to detect bugs in software? (CO4) 10
- 7-b. Differentiate between the white box, black box and gray box testing? (CO4) 10

8. Answer any one of the following:-

- 8-a. List the important shortcomings of LOC for use as a software size estimations. (CO5) 10
- 8-b. Explain configuration management activities? Draw the Performa of change request form. (CO5) 10

2022-23 Jan_June