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Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

MCA

SEM: III - THEORY EXAMINATION (2021 - 2022)

Subject: Software Engineering

Time: 03:00 Hours Max. Marks: 100

General Instructions:

1. All questions are compulsory. It comprises of three Sections A, B and C.

- Section A - Question No- 1 is objective type question carrying 1 mark each & Question No- 2 is very short type questions carrying 2 marks each.
- Section B - Question No- 3 is Long answer type - I questions carrying 6 marks each.
- Section C - Question No- 4 to 8 are Long answer type - II questions carrying 10 marks each.
- 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. Software is (CO1) 1

1. Superset of programs
2. Subset of programs
3. Set of programs
4. None of the above

1-b. UML stands for (CO1) 1

1. Uniform modeling language
2. Unified modeling language
3. Unit modeling language
4. Universal modeling language

1-c. RAD stands for (CO2) 1

1. Relative Application Development
2. Rapid Application Development
3. Rapid Application Document
4. None of the mentioned

1-d. Which one of the following models is not suitable for accommodating any change? (CO2) 1

1. Build & Fix Model
2. Prototyping Model
3. RAD Model

4. Waterfall Model

1-e. Which is the first step in the software development life cycle? (CO3) 1

1. Analysis
2. Design
3. Problem/Opportunity Identification
4. Development and Documentation

1-f. In Design phase, which is the primary area of concern? (CO3) 1

1. Architecture
2. Data
3. Interface
4. All of the mentioned

1-g. Which of the following term describes testing? (CO4) 1

1. Finding broken code
2. Evaluating deliverable to find errors
3. A stage of all projects
4. None of the mentioned

1-h. Maintenance testing is performed using which methodology? (CO4) 1

1. Retesting
2. Confirmation testing
3. Sanity testing
4. Breadth test and depth test

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

1. Two
2. Three
3. Four
4. Five

1-j. What type of software testing is generally used in Software Maintenance? (CO5) 1

1. Regression Testing
2. System Testing
3. Integration Testing
4. Unit Testing

2. Attempt all parts:-

2-a. What are the characteristics of the software? (CO1) 2

2-b. Define SRS and its importance.?(CO2) 2

2-c. List the principles of a software design.(CO3) 2

2-d. Define software testing and its types ?(CO4) 2

2-e. List the characteristics of the products of software projects? (CO5) 2

SECTION B 30

3. Answer any five of the following:-

3-a.	List down the steps to the software development process? Explain. (CO1)	6
3-b.	Explain the different development models along with their merits and demerits..(CO1)	6
3-c.	Differentiate data flow diagram and state transition diagram.(CO2)	6
3-d.	Draw E-R diagram for the following case study : (CO2) An account is a relationship between customer and bank. A customer has a name. A bank has a branch. A customer may have several accounts of different type and balance.	6
3-e.	Differentiate between object oriented and function oriented design.(CO3)	6
3-f.	What is risk-based testing? Explain with the help of an example.(CO4)	6
3-g.	List down the activities involved in maintenance phase. Why is maintenance of a software important? (CO5)	6

SECTION C 50

4. Answer any one of the following:-

4-a.	Discuss various activities during software development life cycle. Explain with help of example and diagram CO1).	10
4-b.	Discuss the prototype model. What is the effect of designing a prototype on the overall cost of the Software Project? (CO1)	10

5. Answer any one of the following:-

5-a.	Explain in detail desirable characteristics of an SRS.(CO2)	10
5-b.	Explain the ways and means for collecting the software requirements and how are they organized and represented? (CO2)	10

6. Answer any one of the following:-

6-a.	What is bottom up design? Discuss its benefits and limitations.(CO3)	10
6-b.	Give a complete template for documentation design specification.(CO3)	10

7. Answer any one of the following:-

7-a.	Define testing and its types. Compare black box and white box testing. (CO4)	10
7-b.	Explain the objective and principles of testing. Explain why testing is considered to be important part in software development. (CO4)	10

8. Answer any one of the following:-

8-a.	What is project management? Describe the project management framework, providing examples of stakeholders, knowledge areas, tools and techniques, and project success factors (CO5)	10
8-b.	What are the roles of the project, program, and portfolio managers? What are suggested skills for project managers? What additional skills do program and portfolio managers need? (CO5)	10