Printed Page:- 03 Subject Code:- BMCA0303

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

MCA

SEM: III - 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. Attributes of good software is _____.[CO1, K2] 1

(a) Development

(b) Maintainability and functionality

(c) Functionality

(d) Maintainability

1-b. CASE Tool is _____.[CO1, K1] 1

(a) Computer Aided Software Engineering

(b) Component Aided Software Engineering

(c) Constructive Aided Software Engineering

(d) Computer Analysis Software Engineering

1-c. Use-Case Diagram is used for?[CO2, K2] 1

(a) analysis

(b) modeling

(c) Testing Software Process

(d) documentation

1-d. Which is true about functional requirements? [CO2, K2] 1

(a) A functional requirement is also called behavioral requirement

(b) A functional requirement includes development and operational requirements

(c) A functional requirement is a statement of how a software product must map

program inputs to program outputs

(d) None of the mentioned

1-e. _____ 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-f. Which of the property of software modularity is incorrect with respect to benefits software modularity? [CO3, K2] 1

(a) Modules are mostly dependent

(b) Modules Can be separately compiled and stored in a library

(c) Module can use other modules

(d) Modules are robust

1-g. Locating or identifying the bugs is known as _____[CO4, K2] 1

(a) Design

(b) Testing

(c) Debugging

(d) Coding

1-h. Which of the following is/are White box technique? [CO4, K2] 1

(a) Statement Testing

(b) Decision Testing

(c) Condition Coverage

(d) All of the mentioned

1-i. Quality Management in software engineering is also known as[CO5, K2] 1

(a) SQA

(b) SQM

(c) SQI

(d) SQA and SQM

1-j. Software Maintenance includes_____.[CO5, K2] 1

(a) Error corrections

(b) Enhancements of capabilities

(c) Deletion of obsolete capabilities

(d) All of the mentioned

2. Attempt all parts:-

2.a. List the task regions in the Spiral model.[CO1, K2] 2

2.b. Define requirement verification and validation.[CO2, K3] 2

2.c. Illustrate the elements of design model.[CO3, K3] 2

2.d.	Explain Regression testing.[CO4, K2]	2
2.e.	Explain the benefits of using CASE tools.[CO5, K2]	2

SECTION-B 30

3. Answer any five of the following:-

3-a.	Explain Agile Methodology in detail. [CO1, K3]	6
3-b.	Discuss Spiral model with advantages and disadvantages.[CO1, K3]	6
3-c.	Explain the ways and means for collecting the software requirements and how are they organized and represented.[CO2, K4]	6
3-d.	Illustrate different types of requirement analysis model with example. [CO2, K4]	6
3.e.	List four reasons why it is difficult to improve software process.[CO3, K3]	6
3.f.	Define the role of moderator in review process?[CO4, K3]	6
3.g.	Define Six Sigma and how is it important in project management? [CO5, K4]	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	Explain the reason you need to learn software engineering concepts?[CO1, K3]	10
4-b.	Is software a product or process? Justify your answer with example.[CO1, K5]	10

5. Answer any one of the following:-

5-a.	Mention IEEE standars for SRS.[CO2, K2]	10
5-b.	Discuss any two techniques of requirement elicitation.[CO2, K3]	10

6. Answer any one of the following:-

6-a.	Draw a translating diagram for analysis model into a software design. Brief about each[CO3,K3]	10
6-b.	Describe decomposition levels of abstraction and modularity concepts in softwareDesign.[CO3, K4]	10

7. Answer any one of the following:-

7-a.	Write a note on: a) Black box Testing, b) Regression Testing, c) Whitebox testing, d) Integration Testing[CO4, K3]	10
7-b.	Explain 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 white box testing techniques (for example, branch coverage) might uncover a fault and vice versa. [CO4, K5]	10

8. Answer any one of the following:-

8-a.	Define project management? Describe the project management framework, providing examples of stakeholders, knowledge areas, tools and techniques, and project success factors [CO5, K5]	10
8-b.	Define the following: (i) Configuration Management (ii) Software re-engineering (iii) CASE Tools [CO5, K3]	10