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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

MCA Integrated

SEM: IV - THEORY EXAMINATION (2025 - 2026)

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:-

- (1.1) Attributes of good software is _____.[CO1,K1] 1
- (a) Development
 - (b) Maintainability and functionality
 - (c) Functionality
 - (d) Maintainability
- (1.2) To produce a good quality product, process should be _____.[CO1,K2] 1
- (a) Complex
 - (b) Efficient
 - (c) Rigorous
 - (d) none of the above
- (1.3) Use-Case Diagram is used for? [CO2,K1] 1
- (a) analysis
 - (b) modeling
 - (c) Testing Software Process
 - (d) documentation
- (1.4) QFD stands for_____.[CO2,K1] 1
- (a) quality function design
 - (b) quality function development
 - (c) quality function deployment
 - (d) none of the mentioned
- (1.5) In what type of coupling, the complete data structure is passed from one module to 1

another?[CO3,K2]

- (a) Control Coupling
- (b) Stamp Coupling
- (c) External Coupling
- (d) Content Coupling

(1.6) Software Design consists of _____? [CO3,K1] 1

- (a) Software Product Design
- (b) Software Engineering Design
- (c) Software Product & Engineering Design
- (d) None of the mentioned

(1.7) Locating or identifying the bugs is known as _____[CO4,K1] 1

- (a) Design
- (b) Testing
- (c) Debugging
- (d) Coding

(1.8) Beta testing is done at_____.[CO4,K1] 1

- (a) User's end
- (b) Developer's end
- (c) User's & Developer's end
- (d) None of the mentioned

(1.9) In reverse engineering, what refers to the level of detail that is provided at an abstraction level? [CO5,K1] 1

- (a) interactivity
- (b) completeness
- (c) abstraction level
- (d) directionality

(1.10) Quality Management in software engineering is also known as[CO5,K1] 1

- (a) SQA
- (b) SQM
- (c) SQI
- (d) SQA and SQM

2. Attempt all parts:-

(2.1) Explain the characteristics of the software.[CO1,K2] 2

(2.2) Explain Facilitated Application Specification Technique(FAST).[CO2,K1] 2

(2.3) List the principles of a software design.[CO3,K2] 2

(2.4) Define risk-based testing. Explain with the help of an example.[CO4,K3] 2

(2.5) Define the role of a good project manager?[CO5,K1] 2

SECTION-B 30

Answer any one of the following:-

(3.1) Differentiate between Iterative and Incremental model in software development 6

	process.[CO1,K2]	
(3.2)	Discuss the important features of spiral model with the help of suitable diagram. Also explain the drawbacks of the spiral model.[CO1,K4]	6
	Answer any one of the following:-	
(3.3)	Explain the components of SRS in detail.[CO2,K2]	6
(3.4)	Describe the minimum features that are required to be present in a good SRS.[CO2,K3]	6
	Answer any one of the following:-	
(3.5)	Explain the advantages of Modularization in software designing with example.[CO3,K3]	6
(3.6)	Explain different types of Coupling with Example.[CO3,K2]	6
	Answer any one of the following:-	
(3.7)	Explain acceptance testing and beta testing.[CO4,K2]	6
(3.8)	Explain the various types of system testing.[CO4,K2]	6
	Answer any one of the following:-	
(3.9)	Discuss about the project management concepts.[CO5,K2]	6
(3.10)	Differentiate between forward and reverse engineering.[CO5,K4]	6
	SECTION-C	50
	4. Answer any <u>one</u> of the following:-	
(4.1)	Explain the reason you need to learn software engineering concepts?[CO1,K3]	10
(4.2)	Discuss the primary benefits and challenges of using the Software Development Life Cycle (SDLC) as a framework for managing software projects.[CO1,K4]	10
	5. Answer any <u>one</u> of the following:-	
(5.1)	Mention IEEE standards for SRS.[CO2,K3]	10
(5.2)	Give the reason Why is it so difficult to gain a clear understanding of what the customer wants.[CO2,K4]	10
	6. Answer any <u>one</u> of the following:-	
(6.1)	Explain software design principles in detail.[CO3,K2]	10
(6.2)	Explain the following with the help of an example:(i) Object Oriented Design (ii) UML Diagram (iii) Modularity [CO3,K3]	10
	7. Answer any <u>one</u> of the following:-	
(7.1)	Compare and contrast white-box testing (structural testing) and black-box testing (functional testing). Highlight the strengths and weaknesses of each.[CO4,K4]	10
(7.2)	Discuss the importance of automated testing in modern development environments. Compare it with manual testing based on speed, accuracy, and cost.[CO4,K3]	10
	8. Answer any <u>one</u> of the following:-	
(8.1)	List down the activities involved in maintenance phase.Discuss the reason why maintenance of a software is important.[CO5,K3]	10
(8.2)	Define project management in the context of software development. How does effective project management contribute to the success of a software project?[CO5,K5]	10