

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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

B.Tech

SEM: VI - THEORY EXAMINATION (2025 - 2026)

Subject: Enterprise Systems

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) | Rails is written in. | (CO1, K1) | 1 |
| | (a) C# | | |
| | (b) Java | | |
| | (c) Ruby | | |
| | (d) Python | | |
| (1.2) | Controller in MVC handles.: | (CO1, K1) | 1 |
| | (a) Data storage | | |
| | (b) User input | | |
| | (c) Rendering | | |
| | (d) Backup | | |
| (1.3) | Domain-specific module in a university ERP: | (CO2, K1) | 1 |
| | (a) Student Management | | |
| | (b) Finance | | |
| | (c) HR | | |
| | (d) MM | | |
| (1.4) | ERP architecture that separates presentation, application, database: | | 1 |
| | (CO2, K2) | | |
| | (a) One-tier | | |
| | (b) Two-tier | | |
| | (c) Three-tier | | |
| | (d) Peer-to-peer | | |

- (1.5) CRM focuses on managing relationships with: (CO3, K1) 1
- (a) Suppliers
 - (b) Customers
 - (c) Employees
 - (d) Regulators
- (1.6) Bespoke software is built: (CO3, K1) 1
- (a) For one specific customer
 - (b) For mass market
 - (c) As open-source
 - (d) As freeware
- (1.7) SSO allows a user to: (CO4, K1) 1
- (a) Use multiple passwords
 - (b) Login once for multiple apps
 - (c) Skip authentication
 - (d) Share credentials
- (1.8) Network monitoring enforces: (CO4, K1) 1
- (a) Speed only
 - (b) Policies
 - (c) User passwords
 - (d) Disk space
- (1.9) A 3-2-1 backup rule means: (CO5, K2) 1
- (a) 3 copies, 2 media, 1 offsite
 - (b) 3 days, 2 weeks, 1 month
 - (c) 3 locations, 2 formats, 1 year
 - (d) 3 full, 2 diff, 1 inc
- (1.10) In a data centre, ASHRAE recommends max inlet temp: (CO5,K2) 1
- (a) 20°C
 - (b) 27°C
 - (c) 32°C
 - (d) 40°C

2. Attempt all parts:-

- (2.1) Compare JSP and Servlets briefly. (CO1, K4) 2
- (2.2) List two types of web service protocols. (CO2, K2) 2
- (2.3) Differentiate between COTS and bespoke. (CO3,K4) 2
- (2.4) Differentiate between IPsec and TLS. (CO4, K4) 2
- (2.5) List the disadvantages of leasing hardware instead of buying. (CO5, K1) 2

SECTION-B

30

Answer any one of the following:-

- (3.1) Analyze role of AJAX in asynchronous communication in web applications. (CO1, K3) 6

(3.2)	Apply DBMS concepts in designing an online library system record. (CO1, K3)	6
Answer any one of the following:-		
(3.3)	Predict what happens if HR module web service has no idempotency for payroll updates. (CO2, K3)	6
(3.4)	List the steps to migrate a Materials Management report to a web service. (CO2, K1)	6
Answer any one of the following:-		
(3.5)	List and draw the phases of a typical software acquisition process. (CO3, K1)	6
(3.6)	Criticize the idea of 'free software has no acquisition cost but infinite TCO'. (CO3, K3)	6
Answer any one of the following:-		
(3.7)	Draw a role matrix for a finance application with three roles as viewer, approver and admin (CO4, K3)	6
(3.8)	Compare how audit trails detect insider threats differently from external attacks. (CO4, K4)	6
Answer any one of the following:-		
(3.9)	Suggest a LAN technology for a factory floor with high EMI and long cable runs over 500m. (CO5, K2)	6
(3.10)	In case of cluster node failure, how cluster quorum disk helps to avoid split-brain. (CO5, K3)	6
SECTION-C		50
4. Answer any <u>one</u> of the following:-		
(4.1)	Assess the positive aspects and limitations of the MVC pattern within current web development practices. (CO1, K2)	10
(4.2)	Draw the architecture for student management system using three-tier model (CO1, K3)	10
5. Answer any <u>one</u> of the following:-		
(5.1)	Design a hybrid ERP-SOA model for a multinational retail chain with justification of each integration layer. (CO2, K4)	10
(5.2)	Design a test harness to validate web service interoperability across HTTP, JMS, and SMTP protocols. (CO2, K4)	10
6. Answer any <u>one</u> of the following:-		
(6.1)	Design a hybrid COTS-bespoke acquisition strategy for a mid-sized manufacturer, justify each phase. (CO3, K4)	10
(6.2)	Derive five anti-patterns in electronic data exchange that increase TCO. (CO3, K3)	10
7. Answer any <u>one</u> of the following:-		
(7.1)	Derive five anti-patterns in SSL/TLS deployment that reduces the encryption state. (CO4, K3)	10
(7.2)	Contrast three directory server protocols : LDAP, Active Directory and RADIUS for SSO integration. (CO4, K4)	10
8. Answer any <u>one</u> of the following:-		

- | | | |
|-------|--|----|
| (8.1) | Compare Spine-leaf with three-tier architecture for hyperscale data center in detail.
(CO5, K3) | 10 |
| (8.2) | State the impact of Multipath I/O impact on SAN reliability in dual-fabric design.
(CO5, K1) | 10 |

REG_JAN_JUNE_2026