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

**BCA**

**SEM: III - THEORY EXAMINATION (2025 - 2026)**

**Subject: Current Trends & Practices in IT**

**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. Which term best describes technologies expected to create significant social or economic effects within 5–10 years? (CO1, K2) 1
- (a) Legacy Technology
- (b) Emerging Technology
- (c) Obsolete Technology
- (d) Sustainable Technology
- 1-b. IoT connected cars use sensors mainly for: (CO1, K2) 1
- (a) Fuel price monitoring
- (b) Operation, maintenance, and passenger comfort
- (c) Insurance claim processing
- (d) Traffic fine payment
- 1-c. "The Cloud" refers to: (CO2, K2) 1
- (a) Local computer storage
- (b) Remote servers accessed via the Internet
- (c) Wireless communication only
- (d) A type of database
- 1-d. Software responsible for creating and managing VMs: (CO2, K3) 1
- (a) Kernel
- (b) Hypervisor
- (c) Emulator
- (d) Virtual Driver

- 1-e. AI refers to the simulation of: (CO3, K2) 1
- (a) Human intelligence
  - (b) Animal instincts
  - (c) Mechanical energy
  - (d) Chemical processes
- 1-f. NLP stands for: (CO3, K1) 1
- (a) Neural Learning Process
  - (b) Natural Language Processing
  - (c) Numerical Logic Program
  - (d) Network Layer Protocol
- 1-g. Cyber threat refers to: (CO4, K2) 1
- (a) Unauthorized sharing of files
  - (b) Malicious activity targeting systems or data
  - (c) Backup of important files
  - (d) Cloud storage access
- 1-h. Phishing is a: (CO4, K2) 1
- (a) Social engineering attack
  - (b) Firewall mechanism
  - (c) Cloud computing service
  - (d) Encryption algorithm
- 1-i. Netflix uses analytics mainly for (CO5, K3) 1
- (a) File storage
  - (b) Employee attendance
  - (c) Tax calculations
  - (d) Movie recommendations
- 1-j. Data warehouses are best described as (CO5, K2) 1
- (a) Temporary cache memory
  - (b) Central repositories of structured data
  - (c) Online gaming servers
  - (d) Social media platforms

2. Attempt all parts:-

- 2.a. Write two applications of Artificial Intelligence in fifth-generation computers. (CO1, K2) 2
- 2.b. State any two service models of cloud computing. (CO2, K2) 2
- 2.c. Compare CNN and RNN based on their applications. (CO3, K4) 2
- 2.d. Why is ransomware considered more dangerous than a virus? (CO4, K3) 2
- 2.e. Argue why sustainable computing is necessary in the present digital era. (CO5, K5) 2

### **SECTION-B**

30

3. Attempt all parts:-

- 3.a. Answer any one of the following:-

3.a.(i)	Describe blockchain technology and explain its four key features. (CO1, K3)	6
3.a.(ii)	Define virtual reality and explain three of its types with examples. (CO1, K3)	6
3.b.	Answer any one of the following:-	
3.b.(i)	Differentiate between public, private, and community cloud. (CO2, K4)	6
3.b.(ii)	Describe virtualization and explain how multiple OS can run on a single machine. (CO2, K4)	6
3.c.	Answer any one of the following:-	
3.c.(i)	Describe how computer vision is applied in healthcare. (CO3, K3)	6
3.c.(ii)	Explain the concept of data pre-processing in machine learning. (CO3, K3)	6
3.d.	Answer any one of the following:-	
3.d.(i)	Contrast between malware, ransomware, and spyware. (CO4, K4)	6
3.d.(ii)	Comparison of symmetric and asymmetric encryption. (CO4, K4)	6
3.e.	Answer any one of the following:-	
3.e.(i)	Summarize AI applications in healthcare and evaluate ethical implications. (CO5, K3)	6
3.e.(ii)	Compare Tableau, Power BI, and Google Data Studio in terms of visualization features. (CO5, K3)	6
<b>SECTION-C</b>		<b>50</b>
4.	Answer any <u>one</u> of the following:-	
4-a.	Explain the concept of IoT and analyse its role in improving efficiency in manufacturing, agriculture, and healthcare. (CO1, K3)	10
4-b.	Analyse the role of edge computing in real-time decision-making and critical applications. (CO1, K3)	10
5.	Answer any <u>one</u> of the following:-	
5-a.	Explain why cloud computing is cost-efficient compared to traditional IT. (CO2, K4)	10
5-b.	Evaluate security features of private vs hybrid cloud in financial systems. (CO2, K4)	10
6.	Answer any <u>one</u> of the following:-	
6-a.	Suggest preprocessing techniques for noisy data and justify the choice. (CO3, K3)	10
6-b.	Define deep learning and evaluate how it differs from traditional ML. (CO3, K3)	10
7.	Answer any <u>one</u> of the following:-	
7-a.	Apply hashing mechanisms for securing password databases. (CO4, K3)	10
7-b.	Evaluate the strengths and weaknesses of intrusion detection methods. (CO4, K3)	10
8.	Answer any <u>one</u> of the following:-	
8-a.	Discuss Big Data technologies and evaluate their contribution to analytics. (CO5, K3)	10
8-b.	Examine benefits and risks of using cloud computing in education. (CO5, K3)	10