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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech (Working Professional)

SEM: II - THEORY EXAMINATION (2024- 2025)

Subject: Artificial Intelligence & Cyber Ethics

Time: 2 Hours

Max. Marks: 50

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

15

1. Attempt all parts:-

- | | | |
|------|--|---|
| 1-a. | Principle that supports openness in AI decision-making: (CO1,K1) | 1 |
| | (a) Speed | |
| | (b) Flexibility | |
| | (c) Cost-efficiency | |
| | (d) Transparency | |
| 1-b. | Bias introduced during model training is referred to as: (CO2, K1) | 1 |
| | (a) Systemic bias | |
| | (b) Algorithmic bias | |
| | (c) Social bias | |
| | (d) Semantic bias | |
| 1-c. | Constructing an ethical AI system includes: (CO3,K1) | 1 |
| | (a) Interface redesign | |
| | (b) Embedded fairness checkpoints | |
| | (c) Model normalization | |
| | (d) Subsampling | |
| 1-d. | Copyrights protect (CO4,K1) | 1 |
| | (a) Business plans | |
| | (b) Computer hardware | |
| | (c) Creative expressions | |

- (d) Logos
- 1-e. Example of deepfake misuse (CO5,K1) 1
 - (a) Creating fictional movie characters
 - (b) Swapping faces to mislead
 - (c) Enhancing documentary footage
 - (d) Using voice synthesis in gaming

2. Attempt all parts:-

- 2.a. Identify two examples of dual-use AI applications. (CO1,K2) 2
- 2.b. Identify two challenges in achieving fairness in AI. (CO2,K2) 2
- 2.c. Evaluate two risks posed by deploying AI systems without a privacy framework. (CO3,K2) 2
- 2.d. Illustrate the significance of user awareness in preventing cybercrimes (CO4,K2) 2
- 2.e. Explain how AI contributes to disaster management and relief efforts. (CO5,K2) 2

SECTION-B

15

3. Answer any three of the following:-

- 3-a. Explain how cyber laws and AI ethics intersect. Give real-life examples where both had to be considered together. (CO1, K3) 5
- 3-b. List and describe any four types of bias in AI systems. (CO2,K3) 5
- 3-c. Construct a framework for ethical decision-making in AI-driven hiring platforms. (CO3,K3) 5
- 3-d. Illustrate the basic concepts of data encryption and its importance in cybersecurity (CO4,K3) 5
- 3-e. Analyze how collaboration between policymakers, researchers, and developers ensures responsible and equitable AI deployment in societies worldwide. (CO5, K3) 5

SECTION-C

20

4. Answer any one of the following:-

- 4-a. Summarize the importance of fairness and accountability in AI systems.(CO1,K3) 4
- 4-b. Explain the concept of transparency in AI and how it builds trust. (CO1,K3) 4

5. Answer any one of the following:-

- 5-a. Explain the concept of fairness in AI systems. (CO2,K3) 4
- 5-b. Explain how bias can influence AI decision-making. (CO2,K3) 4

6. Answer any one of the following:-

- 6-a. Examine the role of incident response planning in AI-driven cybersecurity platforms. (CO3, K3) 4
- 6-b. Identify and categorize the risks in AI usage across three sectors: healthcare, finance, and marketing.(CO3, K4) 4

7. Answer any one of the following:-

- 7-a. Analyze the ethical concerns related to intellectual property theft in digital environments and its consequences. (CO4, K3) 4
- 7-b. Explain cyber security and privacy issues. (CO4, K3) 4
8. Answer any one of the following:-
- 8-a. Explain the political impacts of AI on democracy. (CO5, K3) 4
- 8-b. Examine how AI can influence transparency and accountability in government processes. (CO5, K3) 4

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