


Name:			
Enrolment No:			
UPES End Semester Examination, December 2023			
Course: Artificial Intelligence & Machine Learning Law Program: BA/BBA/BCOM LLB(Cyber Laws) Course Code: CLCB5018		Semester: IX Time : 03 hrs. Max. Marks: 100	
Instructions:			
SECTION A (5Qx2M=10Marks)			
S. No.		Marks	CO
Q 1	Define Artificial Intelligence as per the EU AI Act.	2	CO1
Q 2	What is the necessity of regulating AI based systems and technologies?	2	CO1
Q 3	Why has generative AI emerged as a controversial form of AI?	2	CO1
Q 4	What are the key legal considerations in regulating artificial intelligence technologies?	2	CO1
Q 5	What are high risk AIs?	2	CO1
SECTION B (4Qx5M= 20 Marks)			
Q 6	Discuss the role which the government can play in overseeing and regulating the use of AI technologies?	5	CO2
Q 7	Describe the process of determination of liability in cases where AI systems cause harm or make incorrect decisions.	5	CO3
Q 8	Elaborate the possible negative impacts of AI based technologies on civil rights and liberties.	5	CO2
Q 9	Discuss the role data protection laws play in regulating the use of personal data in AI applications?	5	CO2
SECTION-C (2Qx10M=20 Marks)			
Q 10	Analyze any emerging legal or ethical standards related to AI surveillance technology in the proposed EU AI Act. How might these standards influence the development, deployment, and oversight of AI based systems?	10	CO3
Q 11	Analyze international standards or best practices related to algorithmic fairness in healthcare AI in the EU AI Act and the US Executive order on AI. How might adherence to these standards contribute to addressing algorithmic bias in AI-assisted medical diagnosis on a global scale?	10	CO2

SECTION-D
(2Qx25M=50 Marks)

Q 12	<p>Statement of the Question: <u>Provide detailed and well-supported responses to each question.</u> citing relevant sections of Indian regulations, ethical guidelines, and any emerging standards related to algorithmic accountability. Consider the perspectives of both DataInsight and Concerned Citizens for Algorithmic Accountability, and explore practical solutions to address the concerns raised in the deployment of AI systems for credit assessment.</p> <p>Scenario: DataInsight, an Indian tech company, has developed an artificial intelligence-based system called AutoCredit, designed to assess creditworthiness for loan applications using machine learning algorithms. Recently, a group of activists, Concerned Citizens for Algorithmic Accountability, raises concerns about potential biases and lack of transparency in the decision-making process of AutoCredit. They argue that the system may lead to discriminatory outcomes and demand accountability for the algorithms used in credit evaluation.</p> <p>Questions:</p> <ol style="list-style-type: none"> 1. Algorithmic Accountability Basics <ol style="list-style-type: none"> i. Identify and explain the fundamental concepts of algorithmic accountability in the context of artificial intelligence in India. ii. Assess the concerns raised by Concerned Citizens for Algorithmic Accountability regarding potential biases in AutoCredit. What legal frameworks or guidelines in India address algorithmic accountability in the financial sector? 2. Bias Detection and Mitigation <ol style="list-style-type: none"> i. Discuss the challenges associated with bias in machine learning algorithms, especially in systems like AutoCredit that impact financial decisions. ii. Evaluate the measures that DataInsight can implement to detect and mitigate biases in AutoCredit. How can transparency and explainability be enhanced to address concerns related to biased decision-making? 3. Regulatory Landscape and Ethical Guidelines <ol style="list-style-type: none"> i. Explore the existing regulatory landscape in India or in the world (if any) regarding the use of AI in the financial sector. Are there specific regulations or ethical guidelines that DataInsight should adhere to in ensuring accountability for AutoCredit? 	<p>2.5+2.5+5+5+5+5=25</p>	<p>CO4</p>

	<p>ii. Analyze any international standards or best practices related to algorithmic accountability and fairness. How might adherence to these standards enhance the accountability of AI systems like AutoCredit on a global scale?</p>		
Q 13	<p>Statement of the Question: <u>Provide detailed and well-supported responses to each question.</u> citing relevant sections of Indian regulations, ethical guidelines, and any emerging standards related to algorithmic bias in healthcare AI. Consider the perspectives of both AI4Health and Ethical Healthcare Watch, and explore practical solutions to address the concerns raised in the deployment of AI systems for medical diagnosis.</p> <p>Scenario: AI4Health, a leading Indian healthcare technology company, has developed an artificial intelligence-based diagnostic system named MediScan, designed to assist healthcare professionals in interpreting medical images for diagnosis. Recently, a patient advocacy group, Ethical Healthcare Watch, raises concerns about potential biases in the MediScan algorithm, arguing that the system may produce biased results that could impact patient outcomes. They demand transparency and accountability in addressing algorithmic bias.</p> <p>Questions:</p> <ol style="list-style-type: none"> 1. Algorithmic Bias Basics <ol style="list-style-type: none"> i. Identify and explain the fundamental concepts of algorithmic bias in the context of artificial intelligence in India. ii. Assess the concerns raised by Ethical Healthcare Watch regarding potential biases in the MediScan algorithm. What legal and ethical considerations in India address algorithmic bias in healthcare AI systems? 2. Impact on Patient Outcomes <ol style="list-style-type: none"> i. Discuss the potential consequences of algorithmic bias in medical diagnostic systems like MediScan. How might biased results impact patient outcomes and contribute to disparities in healthcare? ii. Evaluate the measures that AI4Health can implement to identify and rectify biases in MediScan. How can transparency and fairness be enhanced to address concerns related to biased diagnostic results? 3. Informed Consent and Patient Rights <ol style="list-style-type: none"> i. Discuss the role of informed consent in addressing algorithmic bias in healthcare AI. What steps can AI4Health take to ensure that patients are adequately 	(5+5+5+5+5=25)	CO4

	informed and have the right to question or refuse AI-assisted diagnostics?		
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