

SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF INFORMATION TECHNOLOGY QUESTION BANK



III SEMESTER

PDS201-ETHICS AND AI

Regulation – 2023

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Prepared by

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DEPARTMENT OF INFORMATION TECHNOLOGY

QUESTION BANK

SUBJECT : PDS201-ETHICS AND AI

SEM / YEAR: III Sem / II Year M.Tech Data Science

UNIT – I: INTRODUCTION TO ARTIFICIAL INTELLIGENCE AND ETHICS

Introduction to AI- Types of AI Systems- Machine learning- Science and Fiction of AI- Ethics :Descriptive Ethics- Normative Ethics- Meta ethics- Applied Ethics- Relationship Between Ethics and Law- Codes of Ethics in Context-Machine Ethics- Moral Diversity and Testing- Normative Ethical Theories- Ethics and Empirical Evidence- AI, Codes of Ethics and the Law

PART – A

Q. No.	Questions	BT Level	Competence
1.	Define Artificial Intelligence.	BTL1	Remember
2.	List the types of Artificial Intelligence systems.	BTL1	Remember
3.	Compare Descriptive Ethics and Normative Ethics.	BTL2	Understand
4.	Tell the meaning of Machine Learning.	BTL1	Remember
5.	Show the relationship between Ethics and Artificial Intelligence.	BTL1	Remember
6.	Label the different branches of Ethics.	BTL1	Remember
7.	Contrast Ethics and Law.	BTL2	Understand
8.	Differentiate Machine Ethics and Human Ethics.	BTL2	Understand
9.	Restate the significance of Codes of Ethics in AI.	BTL2	Understand
10.	Recall the concept of Descriptive Ethics.	BTL1	Remember
11.	Identify the characteristics of Applied Ethics.	BTL1	Remember
12.	State the objectives of Machine Ethics.	BTL1	Remember

13.	Quote any one code of ethics followed in AI development.	BTL1	Remember
14.	Compare Science Fiction AI and Real-world AI.	BTL2	Understand
15.	Differentiate Applied Ethics and Meta Ethics.	BTL2	Understand
16.	Draw the classification of ethical theories.	BTL1	Remember
17.	Define Meta Ethics.	BTL1	Remember
18.	Contrast Weak AI and Strong AI.	BTL2	Understand
19.	List the normative ethical theories.	BTL1	Remember
20.	Restate the role of empirical evidence in AI ethics.	BTL2	Understand
21.	Identify the relationship between Ethics and Law.	BTL1	Remember
22.	Compare supervised learning and unsupervised learning in AI.	BTL2	Understand
23.	Differentiate ethical issues and legal issues in Artificial Intelligence.	BTL2	Understand
24.	State the importance of Moral Diversity in AI.	BTL2	Understand
PART-B			
1.	Apply the principles of AI ethics to solve ethical issues in a healthcare AI system.	BTL3	APPLY
2.	Analyze the relationship between Ethics, Law and Artificial Intelligence with suitable examples.	BTL4	Analyze
3.	Design an ethical framework for the development of Artificial Intelligence applications.	BTL3	Apply
4.	Illustrate the various normative ethical theories and their applications in AI.	BTL4	Analyze
5.	Evaluate the effectiveness of different ethical theories in addressing AI-related issues.	BTL5	Evaluate
6.	Justify the need for Machine Ethics in intelligent systems.	BTL4	Analyze
7.	Assess the importance of ethical guidelines in developing trustworthy AI systems.	BTL5	Evaluate
8.	Solve a real-world case study involving ethical dilemmas in AI-based decision-making.	BTL3	Apply

9.	Conclude how moral diversity influences AI system design.	BTL4	Analyze
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10.	Recommend suitable ethical practices for organizations developing AI technologies.	BTL5	Create
11.	Summarize the importance of empirical evidence in AI ethics.	BTL4	Analyze
12.	Judge whether existing AI regulations are sufficient to ensure ethical AI development.	BTL5	Evaluate
13.	Illustrate the working of Machine Learning and explain its role in Artificial Intelligence.	BTL3	Apply
14.	Justify the importance of ethical principles in the design and deployment of Artificial Intelligence systems.	BTL5	Evaluate
15.	Analyze the impact of Codes of Ethics on responsible AI development.	BTL4	Analyze
16.	Conclude whether Artificial Intelligence can make ethical decisions independently by supporting your answer with suitable ethical theories.	BTL5	Evaluate
17.	Demonstrate the implementation of Codes of Ethics in AI system development.	BTL6	Create

UNIT - II: TRUST AND FAIRNESS IN AI SYSTEMS

User Acceptance and Trust- Functional Elements of Trust- Ethical Principles for Trustworthy and Fair AI- Non-maleficence Responsibility and Liability: Moral Responsibility Versus Liability- Complex Liability- Strict Liability- Consequences of Liability.

PART – A

Q. No.	Questions	BT Level	Competence
1.	Define trust in Artificial Intelligence.	BTL1	Remember
2.	Compare moral responsibility and legal liability.	BTL2	Understand
3.	List the ethical principles of trustworthy AI.	BTL1	Remember
4.	Contrast trustworthy AI and fair AI.	BTL2	Understand
5.	List the ethical principles of trustworthy AI.	BTL1	Remember
6.	Differentiate strict liability and complex liability.	BTL2	Understand
7.	Show the functional elements of trust.	BTL1	Remember
8.	Restate the importance of user trust in AI systems.	BTL2	Understand

9.	Label the components of trustworthy AI.	BTL1	Remember
10.	Recall the concept of non-maleficence.	BTL1	Remember

11.	Identify the meaning of moral responsibility.	BTL1	Remember
12.	Compare accountability and responsibility in AI	BTL2	Understand
13.	Differentiate ethical principles and legal principles in AI.	BTL2	Understand
14.	Contrast user acceptance and user trust in AI.	BTL2	Understand
15.	State the concept of liability in AI.	BTL1	Remember
16.	Restate the role of non-maleficence in trustworthy AI.	BTL2	Understand
17.	Quote one ethical principle for fair AI.	BTL1	Remember
18.	Compare fairness and transparency in AI systems.	BTL2	Understand
19.	Draw the trust model for AI systems.	BTL1	Remember
20.	Differentiate responsibility and accountability in AI governance.	BTL2	Understand
21.	Define strict liability.	BTL1	Remember
22.	Compare functional trust and user trust in Artificial Intelligence systems.	BTL2	Understand
23.	List the types of liability in AI.	BTL1	Remember
24.	Differentiate moral responsibility and ethical responsibility in the context of AI.	BTL2	Understand

PART-B

1.	Apply the ethical principles of trustworthy AI to a healthcare decision-making system.	BTL3	Apply
2.	Analyze the relationship between user acceptance and trust in Artificial Intelligence systems.	BTL4	Analyze
3.	Design a framework to improve user trust in an AI-based banking application.	BTL-3	Apply
4.	Evaluate the effectiveness of ethical principles in building trustworthy AI systems.	BTL-5	Evaluate
5.	Illustrate the ethical principles required for developing trustworthy and fair AI.	BTL-4	Analyze
6.	Solve a case study involving liability issues in an autonomous AI system.	BTL-3	APPLY
7.	Illustrate how the functional elements of trust contribute to AI adoption.	BTL-3	APPLY
8.	Justify the differences between moral responsibility and legal liability in AI.	BTL-4	Analyze

9.	Assess the role of responsibility and liability in AI governance.	BTL-5	Evaluate
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10.	Demonstrate the implementation of fairness principles in an AI recruitment system.	BTL-3	Apply
11.	Conclude the impact of strict liability on AI developers and users.	BTL-4	Analyze
12.	Recommend suitable strategies to improve trust and fairness in AI applications.	BTL-5	Evaluate
13.	Summarize the consequences of liability in AI-based applications.	BTL-4	Analyze
14.	Judge whether strict liability is an effective legal approach for AI systems.	BTL-5	Evaluate
15.	Determine the appropriate liability model for an AI-driven autonomous vehicle accident.	BTL-3	APPLY
16.	Justify the importance of user trust in the successful deployment of AI technologies.	BTL-5	Evaluate
17.	Develop a comprehensive framework for building a trustworthy and fair AI system by integrating ethical principles, user trust, responsibility, and liability mechanisms.	BTL-6	Create

UNIT - III: RISKS AND PSYCHOLOGICAL ASPECTS OF AI

General Business Risks- Ethical Risks of AI- Managing Risk of AI- Business Ethics for AI Companies- Risks of AI to Workers- Persuasive AI- Misplaced Feelings Towards AI-Misplaced Trust in AI-Unidirectional Emotional Bonding with AI.

PART – A

Q. No.	Questions	BT Level	Competence
1.	Define business risk in Artificial Intelligence.	BTL1	Remember
2.	Compare business risks and ethical risks in AI.	BTL2	Understand
3.	List the ethical risks of AI.	BTL1	Remember
4.	Contrast persuasive AI and traditional AI systems.	BTL2	Understand
5.	Tell the meaning of persuasive AI.	BTL1	Remember
6.	Differentiate misplaced trust and justified trust in AI.	BTL2	Understand
7.	Show the importance of AI risk management.	BTL1	Remember
10.	Label the types of business risks associated with AI.	BTL1	Remember
11.	Recall the concept of misplaced trust in AI.	BTL1	Remember

12.	Restate the importance of managing AI risks.	BTL2	Understand
13.	Identify the risks of AI to workers.	BTL1	Remember
14.	Compare misplaced feelings and emotional bonding towards AI.	BTL2	Understand
15.	Differentiate business ethics and professional ethics in AI.	BTL2	Understand
16.	Contrast ethical risks and psychological risks in AI.	BTL2	Understand
17.	State the meaning of unidirectional emotional bonding.	BTL1	Remember
18.	Restate the impact of AI on workers.	BTL2	Understand
19.	Quote one ethical principle followed by AI companies.	BTL1	Remember
20.	Compare persuasive AI and manipulative AI.	BTL2	Understand
21.	Draw the classification of AI risks.	BTL1	Remember
22.	Differentiate AI-assisted decision-making and AI-driven decision-making.	BTL2	Understand
23.	Define ethical risk in AI.	BTL1	Remember
24.	List the psychological aspects of AI.	BTL1	Remember

PART-B

1.	Apply suitable risk management strategies to minimize business risks in an AI-based organization.	BTL3	APPLY
2.	Analyze the ethical and business risks associated with Artificial Intelligence in modern organizations.	BTL4	Analyze
3.	Evaluate the effectiveness of current AI risk management strategies in reducing ethical and business risks.	BTL5	Apply
4.	Assess the psychological effects of human interaction with AI systems.	BTL5	Evaluate
5.	Recommend suitable ethical practices for organizations to mitigate AI-related risks.	BTL5	Evaluate
6.	Design an ethical framework to address psychological issues arising from AI applications.	BTL3	Apply
7.	Illustrate the psychological aspects of AI, including misplaced trust and emotional bonding.	BTL4	Analyze
8.	Judge whether persuasive AI should be regulated to protect users from manipulation.	BTL5	Evaluate

9.	Develop a comprehensive AI risk management framework that addresses ethical risks, business risks, psychological impacts, and worker welfare.	BTL6	Create
10.	Justify the need for business ethics in organizations developing AI technologies.	BTL4	Analyze

11.	Solve a case study involving ethical risks in an AI-driven healthcare system.	BTL3	Apply
12.	Summarize the major ethical challenges faced by AI companies.	BTL4	Analyze
13.	Analyze the impact of Artificial Intelligence on employment and workforce dynamics.	BTL4	Analyze
14.	Illustrate how persuasive AI influences user behaviour with suitable examples.	BTL3	Apply
15.	Conclude how persuasive AI can influence human decision-making.	BTL4	Analyze
16.	Justify the importance of business ethics in ensuring responsible AI development.	BTL5	Evaluate
17.	Conclude whether the benefits of Artificial Intelligence outweigh its ethical and psychological risks.	BTL5	Evaluate

UNIT - IV: PRIVACY ISSUES AND APPLICATION AREAS OF AI

Introduction- Why AI Needs Data- Private Data Collection and its Dangers- Future Perspectives- Ethical Issues Related to AI Enhancement- Restoration Versus Enhancement- Application areas of AI :Robots and Telemedicine- Education- Quality of Care- Exoskeletons- Psychological Care- Nudging.

PART - A

Q. No.	Questions	BT Level	Competence
1.	Define privacy in Artificial Intelligence.	BTL1	Remember
2.	Compare privacy and data security in AI.	BTL2	Understand
3.	List the applications of AI in healthcare.	BTL1	Remember
4.	Contrast AI restoration and AI enhancement.	BTL2	Understand
5.	Tell the meaning of AI enhancement.	BTL1	Remember
6.	Show the importance of data privacy in AI systems.	BTL1	Remember
7.	Label the types of privacy issues in AI.	BTL1	Remember
8.	Differentiate public data and private data.	BTL2	Understand
9.	Recall the concept of private data collection.	BTL1	Remember
10.	Identify the applications of AI in education.	BTL1	Remember
11.	State the need for privacy protection in AI.	BTL1	Remember
12.	Restate the importance of privacy in AI applications.	BTL2	Understand
13.	Quote one privacy principle followed in AI systems.	BTL1	Remember
14.	Draw the flow of AI-based data collection.	BTL1	Remember

15.	Define telemedicine.	BTL1	Remember
16.	Compare AI applications in healthcare and education.	BTL2	Understand
17.	List the benefits of AI in healthcare.	BTL1	Remember
18.	Identify the challenges of AI in education.	BTL1	Remember
19.	State the significance of responsible data usage in AI.	BTL1	Remember
20.	Differentiate data privacy and data confidentiality.	BTL2	Understand
21.	Recall the role of Artificial Intelligence in telemedicine.	BTL1	Remember
22.	Contrast telemedicine and traditional healthcare.	BTL2	Understand
23.	Identify the ethical issues related to privacy in AI-enabled healthcare systems.	BTL1	Remember
24.	Restate the ethical concerns of AI-based data collection.	BTL2	Understand
PART-B			
1.	Analyze the privacy challenges associated with Artificial Intelligence applications.	BTL4	Analyze
2.	Illustrate the role of AI in healthcare and education with suitable examples.	BTL4	Analyze
3.	Justify the need for privacy protection in AI-based systems.	BTL4	Analyze
4.	Conclude the ethical implications of AI enhancement on society.	BTL4	Analyze
5.	Summarize the impact of private data collection in Artificial Intelligence.	BTL4	Analyze
6.	Evaluate the effectiveness of privacy-preserving techniques in Artificial Intelligence.	BTL5	Evaluate
7.	Analyze the benefits and challenges of AI applications in telemedicine.	BTL4	Analyze
8.	Apply suitable privacy protection techniques in an AI-based healthcare system.	BTL3	Apply
9.	Analyze the ethical and privacy issues involved in the collection and use of personal data by AI systems.	BTL4	Analyze
10.	Justify the importance of balancing technological advancement and user privacy in Artificial Intelligence applications.	BTL4	Analyze
11.	Design an AI application that ensures user privacy and data security in education.	BTL3	Apply
12.	Assess the ethical concerns related to data collection and data sharing in AI systems.	BTL5	Evaluate

13.	Illustrate the role of Artificial Intelligence in telemedicine with suitable examples.	BTL3	Apply
14.	Recommend suitable strategies to ensure privacy and security in AI applications.	BTL5	Evaluate
15.	Develop a comprehensive privacy-preserving AI framework for healthcare and educational applications by integrating ethical principles, data protection mechanisms, and responsible AI practices.	BTL6	Create
16.	Judge whether the benefits of AI in healthcare outweigh the privacy risks involved.	BTL5	Evaluate
17.	Build a secure and privacy-preserving Artificial Intelligence system for smart healthcare by incorporating ethical principles, data protection mechanisms, transparency, and accountability.	BTL6	Create

UNIT - V: AUTONOMOUS VEHICLES AND MILITARY USES OF AI

Levels of Autonomous Driving- Current Situation- Ethical Benefits of AV- Accidents with AVs- Ethical Guidelines for AVs- Privacy and security Issues- Military Uses of AI: Definitions, The Use of Autonomous Weapons Systems- Regulations Governing an AWS- Ethical Arguments for and Against AI for Military Purposes- Ethics in AI and Robotics: A Strategic Challenge.

PART - A

Q. No.	Questions	BT Level	Competence
1.	Define an autonomous vehicle.	BTL1	Remember
2.	Compare autonomous vehicles and conventional vehicles.	BTL2	Understand
3.	List the levels of autonomous driving.	BTL1	Remember
4.	Contrast civilian AI and military AI.	BTL2	Understand
5.	Tell the meaning of autonomous weapon systems.	BTL1	Remember
6.	Differentiate autonomous driving and assisted driving.	BTL2	Understand
7.	Show the importance of AI in autonomous vehicles.	BTL1	Remember
8.	Label the levels of vehicle automation.	BTL1	Remember
9.	Recall the ethical challenges of autonomous vehicles.	BTL1	Remember
10.	Identify the applications of AI in military operations.	BTL1	Remember
11.	State the meaning of autonomous decision-making.	BTL1	Remember
12.	Restate the importance of ethics in autonomous vehicles.	BTL2	Understand
13.	Quote one ethical principle for autonomous vehicle design.	BTL1	Remember
14.	Compare autonomous weapon systems and conventional weapons.	BTL2	Understand

15.	Draw the architecture of an autonomous vehicle system.	BTL1	Remember
16.	Differentiate Level 3 and Level 5 autonomous driving.	BTL2	Understand

17.	Define autonomous weapon systems (AWS).	BTL1	Remember
18.	Contrast human-driven and AI-driven vehicles.	BTL2	Understand
19.	Restate the ethical concerns associated with autonomous weapon systems.	BTL2	Understand
20.	Compare safety and security in autonomous vehicles.	BTL2	Understand
21.	List the benefits of AI in transportation.	BTL1	Remember
22.	Differentiate automation and autonomy in Artificial Intelligence.	BTL2	Understand
23.	Identify the ethical concerns of military AI.	BTL1	Remember
24.	Restate the role of sensors in autonomous vehicles.	BTL2	Understand
PART-B			
1.	Apply ethical principles to address decision-making challenges in autonomous vehicles.	BTL3	Apply
2.	Analyze the ethical, legal, and social issues associated with autonomous vehicles.	BTL4	Analyze
3.	Design a safe and reliable autonomous vehicle system by incorporating AI ethics and safety measures.	BTL3	Apply
4.	Illustrate the levels of autonomous driving and explain their significance with suitable examples.	BTL4	Analyze
5.	Justify the need for ethical regulations in the development of autonomous weapon systems.	BTL4	Analyze
6.	Evaluate the effectiveness of autonomous vehicles in improving road safety and reducing accidents.	BTL5	Evaluate
7.	Conclude the impact of Artificial Intelligence on the future of transportation and mobility.	BTL4	Analyze
8.	Assess the ethical concerns related to the use of autonomous weapon systems in modern warfare.	BTL5	Evaluate
9.	Illustrate the working of autonomous vehicles and explain the role of Artificial Intelligence in autonomous driving.	BTL3	apply
10.	Recommend suitable policies for the responsible use of Artificial Intelligence in autonomous transportation.	BTL5	Evaluate
11.	Summarize the advantages and challenges of AI-based autonomous vehicle technology.	BTL4	Analyze
12.	Judge whether autonomous vehicles are ready for large-scale public deployment by considering ethical and safety issues.	BTL5	Evaluate

13.	Analyze the ethical implications of using Artificial Intelligence in military applications.	BTL4	Analyze
14.	Justify the importance of human oversight in AI-enabled autonomous systems.	BTL5	Evaluate
15.	Develop a comprehensive ethical framework for autonomous vehicles by integrating safety, privacy, accountability, transparency, and legal compliance.	BTL6	Create
16.	Create a responsible Artificial Intelligence governance model for the use of autonomous vehicles and autonomous weapon systems by integrating ethical principles, safety standards, accountability, transparency, and legal regulations.	BTL6	Create
17.	Conclude whether the use of Artificial Intelligence in military operations provides more benefits than risks.	BTL5	Evaluate