

UNIT 1

10 marks questions

1. Explain history of AI development.
2. Explain applications of AI in industries.
3. Explain Challenges in AI.
4. Write a short note on Machine Learning and its types.
5. Explain the machine learning process with steps.

5 marks questions

1. Describe the major challenges faced in the early development of AI.
2. Define Artificial Intelligence and explain any four important parts of AI.
3. Write briefly about Artificial General Intelligence (AGI).
4. Explain the applications of AI in the Banking and Finance industry.
5. Explain the applications of AI in the Healthcare industry.
6. Explain any five major challenges in AI.
7. What is Knowledge Engineering? Describe the main steps involved.
8. Explain different methods of Knowledge Representation.
9. Explain Computer Vision and its major applications.
10. Describe the main steps involved in Computer Vision.
11. Define Natural Language Processing and write any five applications of NLP.
12. Write about Robotics.

UNIT 2

10 marks questions

1. Explain the applications of AI in Healthcare.
2. Explain the applications of AI in the Finance sector.
3. Explain the applications of AI in the Retail industry.
4. Explain the applications of AI in Agriculture.
5. Explain the applications of AI in Education.
6. Explain the applications of AI in Transportation.

5 marks questions

1. Explain the challenges faced in implementing AI across various sectors.
2. Explain how AI improves accuracy and reduces human error in different sectors.
3. Write a short note on Telemedicine and Virtual Care supported by AI.
4. Explain the importance of predictive analytics in modern AI applications.
5. Explain how AI supports real-time decision-making across industries.
6. Write a short note on automation through AI in various fields.
7. Explain how AI enhances user experience in multiple domains.
8. Explain the role of sensors, cameras, and real-time data collection devices in enabling AI applications.
9. Explain the common challenges faced when integrating AI into existing systems.

UNIT 3

10 marks questions

1. Explain Ethics in AI and discuss its key principles such as fairness, transparency, accountability, privacy, and human-centric design.
2. Explain Bias and Fairness in AI systems. Discuss sources of bias, types of bias, and methods for measuring and detecting bias.
3. Explain Transparency in AI Systems and discuss its advantages and disadvantages with suitable examples.
4. Explain the concept of Accountability in AI Systems. How can developers and organizations maintain accountability throughout the AI lifecycle?
5. Explain the importance of Security in AI systems. Discuss different types of security threats and methods to protect AI models.
6. Explain Sustainability in Artificial Intelligence. Discuss environmental, social, and economic aspects of sustainable AI development.

5 Marks Questions

1. What is Ethics in AI? Why is it needed in modern AI systems?
2. What are the key types of bias found in AI systems? Explain any four.
3. How can fairness be ensured in AI systems? Explain the steps or methods.
4. What are the pros and cons of transparency in AI systems?
5. What is accountability in AI? Explain the role of documentation and audit trails.
6. Explain any two major security threats to AI systems (such as data poisoning, adversarial attacks, or model theft).
7. Explain the importance of privacy in AI systems. Mention key privacy protection measures.
8. What is Inclusivity in AI? Why is it important for ethical and fair AI development?

UNIT 4

10 marks question

1. Explain the role of AI in Experimentation and Multi-disciplinary Research with examples from physics, chemistry, biology, and environmental science.
2. Explain Generative AI in detail. Describe its working, applications, tools (ChatGPT, DALL·E, Gemini, Hugging Face, Perplexity), and ethical considerations.
3. Explain Prompt Engineering. Discuss its definition, need, importance, and how it improves accuracy and productivity in AI systems.
4. Explain Large Language Models (LLMs). Describe their working principle, features, applications, advantages, and limitations.
5. Explain Emerging Trends in Artificial Intelligence such as Generative AI, Explainable AI, Edge AI, Multimodal AI, AI in Robotics, AI for Sustainability, and Ethical AI.
6. Explain the future directions of AI development focusing on human-centered AI, integration with IoT/Cloud/Blockchain, ethical guidelines, and progress toward AGI.

5 Marks Questions

1. Explain the role of AI in Particle Physics experiments such as those conducted at the Large Hadron Collider (LHC).
2. Write a short note on the application of AI in Astrophysics and Space Research.
3. Explain how AI is used in Experimental Chemistry or Drug Discovery.
4. Explain the applications of AI in Biological Research such as protein folding, gene expression, and medical diagnosis.

5. Write a brief note on ChatGPT and its educational uses.
6. What is Hugging Face? Explain its importance as an open-source AI platform.
7. What is Explainable AI (XAI)? Why is it important in modern AI systems?
8. Write a short note on Multimodal AI with examples like GPT-4 or Gemini.

UNIT 5

10 Marks Questions

1. Explain the role of Artificial Intelligence in Creative Writing. Discuss idea generation, drafting, editing, video script writing, and the role of prompt engineering.
2. Explain AI for Creative Design. Discuss its meaning, design process, applications, prompt engineering techniques, advantages, and limitations.
3. Explain how AI is used for writing scripts for videos. Discuss structure, workflow, prompt engineering, applications, advantages, and limitations.
4. Explain AI-based Slide Generation. Discuss how AI tools like SlidesGPT work, the role of prompt engineering, applications, advantages, and limitations.
5. Explain the Importance of Prompts in AI Interactions. Discuss meaning, significance, techniques for effective prompting, and its role in various fields.
6. Explain the role of Prompt Engineering in enhancing productivity in creative writing, education, business, and content creation with suitable examples.

5 Marks Questions

1. Write a short note on AI for Creative Writing with examples.
2. Explain any four ways in which AI helps in Creative Design.
3. Write a brief note on idea generation using AI tools.
4. Explain the structure of an AI-generated video script.
5. Write a short note on SlidesGPT and its uses in education or business.
6. Explain the importance of prompt clarity in AI interactions.
7. Write a short note on role prompting with examples.
8. Explain two limitations or challenges of using AI for creative content generation.