E. Answer the questions in 50-80 words each.

1. Howard Gardner's Types of Intelligences:

Howard Gardner proposed multiple intelligences including: Linguistic (e.g., writers), Logical-Mathematical (e.g., scientists), Spatial (e.g., architects), Bodily-Kinesthetic (e.g., dancers), Musical (e.g., musicians), Interpersonal (e.g., leaders), Intrapersonal (e.g., philosophers), and Naturalistic (e.g., environmentalists).

Domains of AI:

AI encompasses various domains: Machine Learning (enabling systems to learn from data), Natural Language Processing (NLP) for human-computer language interaction, Computer Vision for visual interpretation, Robotics for physical interaction, and Expert Systems for decision-making based on rules and knowledge.

3. Real-life Applications & Impact of NLP:

NLP applications include virtual assistants, sentiment analysis in customer feedback, and language translation tools. NLP significantly impacts human-computer interaction by enabling more natural communication and improving accessibility across language barriers.

4. Impact of AI Bias on Decision-making:

Biases in AI algorithms, often stemming from unrepresentative training data, can lead to unfair or discriminatory decision-making processes. For example, biased hiring algorithms might disproportionately exclude certain demographics, resulting in inequitable outcomes and limiting opportunities for individuals or groups.

5. Data Science in Fraud Detection:

Data science plays a vital role in fraud detection in banking by analyzing large datasets of financial transactions to identify unusual patterns and anomalies indicative of fraudulent activity. Machine learning models are trained on historical data to predict and flag suspicious transactions, minimizing financial losses and enhancing security.

6. Ethical Challenges in AI (Bias & Transparency):

Ethical challenges in AI, particularly regarding bias and transparency, require careful attention. AI bias can lead to discriminatory outcomes, necessitating diverse datasets and rigorous testing. Transparency challenges involve understanding how AI models make decisions, crucial for accountability and building trust, addressed through explainable AI techniques.

7. Ethical Implications of AI in Autonomous Weapons:

The ethical implications of AI in autonomous weapons are profound, raising concerns about accountability for harm, the potential for unintended escalation, and the erosion of human control over life-and-death decisions. This area necessitates international regulations and robust ethical frameworks to ensure responsible development and deployment.