Time: 2 Hours   Total Marks- 80

Section A
Multiple Choice Questions
Answer all questions (2 Marks each, 2X 10 = 20 Marks)

1. Which of these terms best describes the type of AI used in today's email spam filters, speech recognition, and other specific applications?
   a. Artificial General Intelligence (AGI)
   b. Artificial Narrow Intelligence (ANI)

2. What do you call the commonly used AI technology for learning input (A) to output (B) mappings?
   a. Unsupervised learning
   b. Supervised learning
   c. Artificial General Intelligence
   d. Reinforcement learning

3. The only way to acquire data for a supervised learning algorithm is to manually label it. I.e., given the input A, to ask a human to provide B.
   a. True
   b. False

4. Which of these statements regarding data acquisition do you agree with?
   a. Some types of data are more valuable than others; working with an AI team can help you figure out what data to acquire.
   b. Only structured data is valuable; AI cannot process unstructured data.
   c. It doesn't help to give data to an AI team, because they can always produce whatever they need by themselves.
   d. It doesn't matter how data is acquired. The more data, the better.

5. You run a company that manufactures scooters. Which of the following are examples of unstructured data?
   a. Pictures of your scooters
   b. The maximum speed of each of your scooters
   c. The number of scooters sold per week over the past year
   d. None of the above

6. Which of these do AI companies do well?
   a. Strategic data acquisition
   b. Invest in unified data warehouses
   c. Spot automation opportunities
   d. All of the above

7. Say you want to input a picture of a person's face (A), and output whether or not they are smiling (B). Because this is a task that most humans can do in less than 1 second, supervised learning can probably learn this A-to-B mapping.
   a. True
   b. False

8. Machine learning is an "iterative" process, meaning that an AI team often has to try many ideas before coming up with something that's good enough, rather than have the first thing they try work.
   a. True
   b. False

9. Say you want to build an AI system to help recruiters with automated resume screening. Which of these steps might be involved in "technical diligence" process?

a. Making sure that an AI system can meet the desired performance

b. Making sure you can get enough data for this project

c. Defining an engineering timeline

d. Ensuring that this is valuable for your business (e.g., estimating the project ROI)

10. Which of these are reasons that it's often unrealistic to expect an ML system to be 100% accurate?

a. You might not have enough data

b. Data can be mislabelled

c. Data can be ambiguous

d. All of the Above

Section B

Short Answer type   **(8 Marks each, 5x8 =40 Marks)**

Answer any 5 Questions

1. Considering the distinction between narrow AI and general AI, how might the development of narrow AI systems pave the way for advancements toward achieving general AI?
2. Could you elaborate on a specific case study where AI technology has significantly improved healthcare accessibility or outcomes for underserved communities?
3. In what ways can ethical frameworks be practically implemented within the AI development process to mitigate biases in algorithms and ensure fair and accountable AI systems?
4. Could you discuss a scenario where AI-driven automation has both positively impacted a particular industry and potentially led to job displacement? How can societies address this challenge?
5. From your perspective, what are the critical steps organizations or governments should take to make AI technologies more accessible and beneficial for diverse communities globally?
6. Considering the significance of machine learning in AI, can you explain a notable instance where neural networks have been instrumental in advancing a specific AI application or technology?
7. In your opinion, how can AI contribute to addressing societal challenges, such as climate change or healthcare disparities, while ensuring equitable access and inclusivity?

Section C
Long Answer Type

Answer Any 2 questions   (10 Marks each, 10 x2 =20 Marks)

1. In your opinion, how can AI contribute to addressing societal challenges, such as climate change or healthcare disparities, while ensuring equitable access and inclusivity?
2. Could you discuss the role of data privacy and security concerns in AI development? What measures are necessary to protect individuals' privacy while harnessing the power of AI?
3. Among the various fields impacted by AI—healthcare, finance, entertainment, and transportation—can you describe an innovative AI application that has significantly transformed user experience or service delivery?
4. In the context of making AI more inclusive, what strategies or initiatives do you believe are crucial to ensuring that AI technologies are accessible and beneficial to people of all backgrounds?