**Artificial Intelligence**

1. Describe the concept of neural networks in Artificial Intelligence, explaining how they mimic the human brain's structure and function to enable machine learning and decision-making. How do neural networks differ from traditional machine learning algorithms, and what advantages do they offer in terms of pattern recognition and data analysis?

2. Explain the difference between weak AI (narrow or specialized AI) and strong AI (general or human-level AI). Provide examples of applications that utilize weak AI, such as virtual assistants or image recognition systems, and discuss the limitations and potential risks of pursuing strong AI. How might strong AI potentially impact society, and what ethical considerations should be taken into account when developing more advanced AI systems?

3. Describe the role of natural language processing (NLP) in Artificial Intelligence, detailing how machines can be trained to understand, generate, and respond to human language. What are some challenges and limitations of NLP, such as dealing with ambiguity, context, and idioms? Provide examples of successful NLP applications, like chatbots or sentiment analysis tools, and discuss the potential applications and implications of more advanced NLP capabilities in areas like customer service, language translation, or content creation.