

**BOWEN UNIVERSITY IWO, OSUN STATE**  
**COLLEGE OF COMPUTING AND COMMUNICATION STUDIES**  
**COMPUTER SCIENCE PROGRAMMME**  
**B. SC. DEGREE FIRST SEMESTER EXAMINATION SESSION: 2023/2024**  
**COURSE CODE: CSC 407 COURSE TITLE: ARTIFICIAL INTELLIGENCE**  
**COURSE CREDIT: 3 DATE: TIME ALLOWED: 2 HOURS**

**Instruction: Answer any four Questions**

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**Question One**

- a. One of the breakthroughs achieved in the space of artificial intelligence is the emergence of electric vehicles (EVs). Discuss the progress, concerns and challenges in the development and deployment of these vehicles and how they can be addressed. Ensure you give examples of companies in this space. **(20 marks)**
- b. In your opinion, what are some regulatory concerns around the emergence of self-driving cars **(5 marks)**

**Question Two**

- a. It is a popular saying that justice delayed is justice denied. Invariably, one of the sectors begging for attention in the country is the judicial system due to prolonged and at times, unending hearing, and determination of cases. As an AI expert, describe how NLP techniques can be applied to improve the efficiency of the judicial system in Nigeria and the modalities for its implementation. **(15 marks)**
- b. How can sentiment analysis be useful for businesses to understand customer feedback and make strategic decisions? **(10 marks)**

**Question Three**

- a. Explain the concept behind Natural Language Processing (NLP), its application areas and the steps involved in text data pre-processing **(15 marks)**
- b. What is Gerontechnology all about? Give 5 examples of its application areas **(10 marks)**

**Question Four**

- a. Explain the four major characteristics of expert system **(10 marks)**
- b. For some time now, there has been confusion around relationship that exist between the duo of Artificial Intelligence, Machine Learning and Deep Learning; so many mix up the

functionalities and capabilities of these three different entities. In a tabular form,

explicitly present the difference that exists between them **(15 marks)**

**Question Five**

- a. One of the areas that taking advantage of artificial intelligence possibilities is the healthcare sector. Succinctly give a description of how AI has been explored in diagnosing medical conditions and predicting patient outcomes alongside, with examples **(10 marks)**
- b. Identify at least five application areas of expert systems **(10 marks)**
- c. Explain the two strategies used in inference engines **(5 marks)**

**Question Six**

- a. Some of the issues getting global attention of recent are global warming and climate change. Explain with examples, how artificial intelligence are being used to address environmental challenges such as climate change. **(10 marks)**
- b. Expert system has three main components, list and explain them **(15 marks)**