

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2018/2019**

**EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSIENSS INFORMATION TECHNOLOGY**

**HBT 2404/BIT 2319: ARTIFICIAL INTELLIGENCE**

**DATE: DECEMBER 2018 TIME: 2 HOURS**

INSTRUCTIONS: Answer question one and any other two questions.

QUESTION ONE

a. Discuss the five application areas where AI technology is having strong impact on industry and everyday life. (10 marks)

b. Discuss the problem characteristic of agents as used in artificial intelligent systems.

 (10 marks)

c. In design of Mobile Robots, the designer must put into consideration some key factors to enable good functionality of the Robot. Outline the main factors to be considered.

 (6 marks)

d. Outline the steps carried out by intelligent agents. (4 marks)

QUESTION TWO

a. Describe the importance of machine learning. (5 marks)

b. An agent in Artificial Intelligent system requires knowledge for its sufficient functionality. Discuss some of these knowledge requirements. (5 marks)

c. Explain the uses of Support Vector machines. (6 marks)

d. Explain the characteristics of support vector machines. (4 marks)

QUESTION THREE

a. Discuss how Bayesian theorem can be used to implement the following systems.

 i. Medical diagnosis systems. (3 marks)

 ii. Manufacturing system diagnosis. (3 marks)

 iii. Computer systems diagnosis. (3 marks)

 iv. Information retrieval (3 marks)

b. Differentiate between Speech Recognition and Speech understanding. (4 marks)

c. What are some of the conditions which may render Face recognition system not be accurate. (4 marks)

QUESTION FOUR

a. Explain any four reasons for advocating for neural networks to solve problems.

 (8 marks)

b. Differentiate between Uniformed search strategies and informed search strategies.

 (4 marks)

c. State two examples in each case. (2 marks)

d. Explain the main components of an expert system. (6 marks)

QUESTION FIVE

a. Differentiate between inference and explanation. (4 marks)

b. Explain the characteristics that differentiate between shallow reasoning and deep reasoning. (4 marks)

c. Expound on the system development stages. (6 marks)

d. With an aide of a flowchart describe the genetic algorithm as used in artificial intelligence. (6 marks)