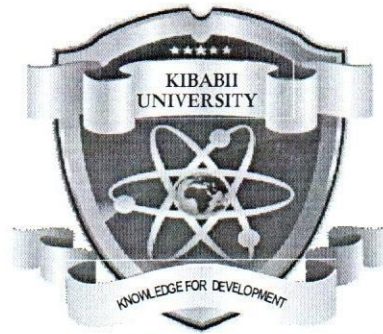


36



(Knowledge for Development)
KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS
2019/2020 ACADEMIC YEAR**

**SPECIAL/SUPPLEMENTARY EXAMINATIONS
YEAR TWO SEMESTER ONE EXAMINATIONS**

**FOR THE DEGREE OF BACHELOR OF SCIENCE
COMPUTER SCIENCE**

COURSE CODE : CSC 217

**COURSE TITLE : INTRODUCTION TO ARTIFICIAL
INTELLIGENCE.**

DATE: 05/02/2021

TIME: 2:00 P.M – 4:00 P.M

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [COMPULSORY] [30 MARKS]

- a) Describe the three level of artificial intelligence [6 Marks]
- b) Describe deep first search [6 Marks]
- c) Describe the application of artificial intelligence in the following
- I. Education
 - II. Public safety and security
 - III. Employment and workplace. [6 Marks]
- d) Explain how the following areas are influencers of artificial intelligence [6 Marks]
- I. Emergence of data science
 - II. Advancement in computer processing speed, new chip architectures and big data file system
 - III. Cloud computing and API
- e) Explain any THREE sub fields that are focus of artificial intelligence research. [6 Marks]

QUESTION TWO [20 MARKS]

- a) With the aid of relevant diagram describe goal-based agents. [6 Marks]
- b) Describe the following properties of an agent
- I. Veracity
 - II. Mobility
 - III. Reactivity. [6 Marks]
- c) Distinguish between
- I. Static vs dynamic
 - II. Discrete vs continuous environment.
 - III. Accessible and inaccessible
 - IV. Deterministic vs Non deterministic [8 Marks]

QUESTION THREE [20 MARKS]

- a) Differentiate between procedural knowledge and heuristic knowledge [4 Marks]
- b) What is propositional logic [4 Marks]
- c) Describe the following terms

- I. Problem space
- II. Space complexity
- III. Depth
- IV. Time complexity.

[8 Marks]

d) Describe the disadvantage of breadth first search

[4 Marks]

QUESTION FOUR [20 MARKS]

a) Why is fuzzy logic important

[4 Marks]

b) Define the term multi agent system

[2 Marks]

c) Identity a name of a multi agent system that can be applied in agriculture.

[2 Marks]

d) Draw and explain the architectural design of the multi agent-based system identified in the above.

[12Marks]

QUESTION FIVE [20 MARKS]

a) Describe the capabilities of expert system

[4 Marks]

b) Describe application areas of expert system

[6 Marks]

c) Identity a problem, in a hospital setting that can be addressed by a multi-agent-based system.

[2 Marks]

d) Draw a use case scenario for the identified problem above in c.

[4 Marks]

e) Draw and level 0 and level 1 one diagram clearly explaining the diagram.

[4 Marks]