(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 bid 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 M arks]