PAN AFRICA CHRISTIAN UNIVERSITY

DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY

END OF SEMESTER EXAMINATION

DEPARTMENT:	**COMPUTING & INFORMATION TECHNOLOGY**
COURSE CODE:	**DICT0214**
COURSE TITLE:	**INTRODUCTION TO ARTIFICIAL INTELLIGENCE**
CAMPUS:	**ROYSAMBU**
EXAM DATE:	**WEDNESDAY, 4TH DECEMBER 2024**
TIME:	**6:00PM-9:00PM**

INSTRUCTIONS

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other THREE questions in Section **B.**
- Write only your **student number** on the answer booklet provided.
- None programmable calculators permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers

Section A (Compulsory)

Question One

a) Using examples, differentiate between "Natural Intelligence" and "Artificial Intelligence". **[2 Marks]**

b) Allan Turing is considered among the fathers of Artificial Intelligence. Discuss two reasons why he is considered as such. **[2 Marks]**

c) Using two examples of knowledge representation, explain how knowledge may be represented in the knowledge base. **[2 Marks]**

d) Examine four areas where Natural Language Processing could be applied in Pan Africa Christian University. **[4 Marks]**

Section B (Answer any 3 Questions)

QUESTION TWO

a) Translate the following into predicate logic:

i. All animals have skin and can move. **[2 Marks]**

ii. Parrot is a bird and is green in color". **[2 Marks]**

b) Using a well labeled diagram, describe the components of an expert system. **[6 Marks]**

QUESTION THREE

a) Using examples, differentiate between forward and backward reasoning. **[2 Marks]**

b) Intelligent agents are software entities that carry out some set of operations on behalf of a user or another program with some degree of independence or autonomy. Describe four categories of intelligent agents. **[4 Marks]**

c) Intelligent agents interact with diverse types of environments. Examine any four of these environments. **[4 Marks]**

QUESTION FOUR

a) With examples, differentiate between deductive and inductive reasoning. **[2 Marks]**

b) Describe four elements for defining a search problem. **[4 Marks]**

c) Discuss four informed searching algorithms in artificial intelligence.

[4 Marks]

QUESTION FIVE

a) Examine any four applications of Artificial Intelligence. **[4 Marks]**

b) Describe types of computer games in the context of artificial intelligence.

[6 Marks]

QUESTION SIX

a) With examples, differentiate between "Inferential adequacy" and "Inferential efficiency". Give one example for each case. **[4 Marks]**

b) Acquiring knowledge for AI from experts is not an easy task. Examine three reasons why this is so. **[6 Marks]**

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