PAN AFRICA CHRISTIAN UNIVERSITY

BACHELOR OF BUSINESS INFORMATION TECHNOLOGY AND BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

END OF TERM EXAMINATION

DEPARTMENT: **COMPUTING & INFORMATION TECHNOLOGY**

COURSE CODE: **BSIT 211**

CAMPUS: **ROYSAMBU**

COURSE TITLE: **INTRODUCTION TO ARTIFICIAL INTELLIGENCE**

EXAM DATE: **THURSDAY,XXXX,APRIL ,2026**

TIME: **2:00PM -4:00PM**

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.

SECTION A (Answer ALL questions)

QUESTION ONE (15 Marks) Compulsory

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a) Tiffany is working on an AI system for an online shop. The system sometimes recommends the wrong products to customers.

i. Suggest two reasons why the system might give wrong recommendations.

[4 Marks]

ii. For each reason, explain how it can cause wrong recommendations. [2 Marks]

iii. Outline three steps Tiffany can take to check and improve the AI system.

[3 Marks]

b) A colleague says their AI chatbot sometimes gives different answers to the same question. Explain three possible reasons for this problem. [6 Marks]

SECTION B
(ANSWER ANY THREE (3) QUESTIONS IN THIS SECTION)
QUESTION TWO (15 marks)

a) Describe two assumptions of knowledge representation. Use examples to explain your answer. [4 Marks]

b) Describe four properties of a good knowledge representation technique [4 Marks]

c) Construct Semantic Network of the following scenario [4 Marks]

Bird is an animal

Bird has part wing

Robin is a bird

Robin is a rusty

Robin is a red

d) Explain any three differences between procedural and declarative knowledge

[3 Marks]

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QUESTION THREE (15 Marks)

a) Briefly explain the meaning of the following concepts

i) Fuzzy logic reasoning [2 Marks]

ii) Case-based Reasoning (CBR) [2 Marks]

iii) State space [2 Marks]

b) Distinguish between deductive and inductive reasoning. Give an example for each case

[4 Marks]

c) Explain any three characteristics of an intelligent agent [3 Marks]

(d). Describe two un informed searching methods [2 Marks]

QUESTION FOUR (15 Marks)

(a) Explain the meaning term 'expert systems' [2 Marks]

(b) State and explain five components of an expert system. [5 Marks]

(c) Describe any three benefits of expert systems in modern society. [3 Marks]

(d) State and explain four participants of developing expert systems [4 Marks]

(e) Describe any two limitations of expert systems [1 Marks]

QUESTION FIVE (15 Marks)

(a) Intelligent agents interact with different types of environments. State and explain any four of these environments [4 Marks].

(b) Briefly describe three limitations of hill climbing method in the context of artificial intelligence [4 Marks]

(c) Briefly explain any two applications of robots in modern society. [2 Marks]

d) Describe the following intelligent tests in the context of artificial intelligence[4 Marks]

i.Turing Test.

ii.Chinese room.

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(e) Describe the meaning of the term expert reasoning task as used in artificial intelligence [1 Marks]

QUESTION SIX (15 Marks)

a) Translate the following rule into a frame [3 Marks]

IF (hair) OR (drinks milk) THEN (mammal)

b) Briefly explain the meaning of the term ' heuristics' in the context of artificial intelligence

[2 Marks]

(e).Briefly describe the meaning of the term 'intelligent agent'. Give one example to illustrate your answer (3 Marks)

(f) Explain three differences between an Agents other software. [3 Marks]

(e) Briefly explain four elements of an intelligent agent [4 Marks]

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