



PAN AFRICA CHRISTIAN UNIVERSITY

BACHELORS OF INFORMATION COMMUNICATION TECHNOLOGY

END OF TERM EXAMINATION

DEPARTMENT: COMPUTING & INFORMATION TECHNOLOGY

COURSE CODE: DICT 0214

CAMPUS: ROYSAMBU

COURSE TITLE: INTRODUCTION TO ARTIFICIAL INTELLIGENCE

EXAM DATE:

TIME:

INSTRUCTIONS

- This exam carry a total of SIX Questions of [10 Marks Each]
- Section One (I) is compulsory.
- Answer any 3(Three) Questions from Section Two (II)
- Read all questions carefully before attempting.

Section One Compulsory 10 marks

Question One.

a) Discuss the impact of artificial Intelligence on the following sub topics and highlight major areas agents are applied.

- i. Impact of AI in Health. **[5 marks]**
- ii. Impact of AI in Education **[5 marks]**

Section Two Attempt any Three Questions.

Question Two.

Illustrate with relevant examples the following concepts as applied in Artificial Intelligent.

- i. Turing Test. **[2 marks]**
- ii. Rational Agent **[2 marks]**
- iii. Pareto optimality. **[2 marks]**
- iv. Mundane reasoning and tasks **[2 marks]**
- v. Distributed intelligent agents. **[2 marks]**

Question Three

Problem Solving in Fully Observable Static Environments in AI, You have a row boat and need to cross a river with your dog, goat, and salad. Unfortunately, apart from you only one more item/animal fits into the boat. For obvious reasons, you cannot leave the dog and the goat unattended -or the goat and the salad, for that matter.

Using blind search problem solving, show by use of relevant text boxes how you are to arrive to the solution using shortest path possible. **[10 Marks].**

Question Four

Imagine you only ever do four things at the weekend: go shopping, watch a movie, play tennis or just stay in. What you do depends on three things: the weather (windy, rainy or sunny); how much money you have (rich or poor) and whether your parents are visiting. You say to your yourself: if my parents are visiting, we'll go to the cinema. If they're not visiting and it's sunny, then I'll play tennis, but if it's windy, and

I'm rich, then I'll go shopping. If they're not visiting, it's windy and I'm poor, then I will go to the cinema. If they're not visiting and it's rainy, then I'll stay in.

Using a decision tree diagram illustrate briefly how you will carry out your weekend using the best way possible. **[10 Marks].**

Question Five.

In AI applications, Heuristic classification centers along machines being trained on learning human trends on purchases in regards to studying records of payments, items bought and history of previous transactions amongst other consumer behaviors.

Discuss major challenges that might affect the process of implementing the above process especially during machine learning.

[10 marks].

Question Six.

Discuss Artificial intelligence on the following sub topics.

i. Game Playing.

[5 Marks]

ii. Speech recognitions

[5 Marks].

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