

MACHAKOS UNIVERSITY
University Examinations 2019
Supplementary exam
SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY
DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY
ARTIFICIAL INTELLIGENCE

Instructions

Attempt Question one and any other two from Section B

Question One

- a. Explain the term intelligent agent. (2 marks)
- b. Discuss any four properties of agent environments. (8 marks)
- c. Explain the following types of intelligence.
 - i. Logical-Mathematical intelligence (2 marks)
 - ii. Bodily-Kinesthetic intelligence (2 marks)
 - iii. Spatial intelligence (2 marks)
- d. Describe the functionality of the following AI components and how they are implemented.
 - i. Perception (2 marks)
 - ii. Reasoning (2 marks)
 - iii. Action (2 marks)
- e. Distinguish between each of the following sets of agent environments. Give an example in each case.
 - i. Dynamic and Static environments (4 marks)
 - ii. Discrete and Continuous Environments (4 marks)

SECTION B

Question Two

- a. Discuss forward chaining and backward chaining. (8 marks)
- b. Discuss ***Machine vision and image processing*** as a key area in Artificial intelligence based on the following titles. (12 marks)
 - i. Overview
 - ii. State of the art
 - iii. Current Applications
 - iv. Potential Applications
 - v. Challenges and Open Issues
 - vi. Conclusion

Question Three

- a. Discuss **robotics** concept as a key area in Artificial intelligence based on the following titles. (12 marks)
 - i. Overview
 - ii. State of the art
 - iii. Current Applications
 - iv. Potential Applications
 - v. Challenges and Open Issues
 - vi. Conclusion
- b. Explain two major goals of Artificial Intelligence. (4 marks)
- c. Outline any four limitations of expert systems. (4 marks)

Question Four

- a. Differentiate programming without A.I and with A.I (6 marks)
- b. Discuss any four applications of A.I (8 marks)
- c. Explain the following types of Knowledge acquisition as used in A.I.
 - i. Auditory Learning (2 marks)
 - ii. Episodic Learning (2 marks)
 - iii. Motor Learning (2 marks)

Question Five

- a. With the aid of a well labeled diagram, explain the components of an expert system. (10 marks)
- b. Justify the statement that “Artificial Intelligence is Multi-disciplinary” (4 marks)
- c. Difference between Human and Machine Intelligence. (4 marks)
- d. Explain Natural Language Processing as used in AI. (2 marks)

End.