



(University of Choice)

Masinde Muliro University of Science and Technology

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER EXAMINATIONS

FOR THE DEGREE
OF

BSC. IN INFORMATION TECHNOLOGY

COURSE CODE: BIT 226

COURSE TITLE: Artificial Intelligence

DATE: Tuesday 26th April, 2022

TIME 12:00-2:00 PM

INSTRUCTIONS

Answer QUESTION ONE and ANY OTHER TWO

QUESTION ONE (30 MARKS)

- a) Explain how robotics problem works. **5 marks**
- b) Discuss the components of a knowledge based system using a diagram. **5 marks**
- c) Explain the players involved in a computer vision system. **10 marks**
- d) Briefly elaborate at least five (5) prime application domains for robotics. **10 marks**

QUESTION TWO(20 MARKS)

Construct a PEAS for at least four agents in a hospital environment. Explain the design and some of the challenges that may exist in its design. **20 marks**

QUESTION THREE (20 MARKS)

- a) Knowledge engineering projects vary widely in content, scope and difficulty. Explain. **6 marks**
- b) When developing an expert system a shell becomes handy because it will not force you to develop the expert system from scratch, it allows you as the KNOWLEDGE ENGINEER to focus more on the knowledge. Explain the term shell and give examples. **14 marks**

QUESTION FOUR(20 MARKS)

- a) Definitions of agents are greatly dependent on the agents' level of rationality. Explain. **4 marks**
- b) Explain some of the intelligent systems that have been commercialized. **8 marks**
- c) Explain the major components of an expert system shell. **8 marks**

QUESTION FIVE (20 MARKS)

- a) What are some of the neural networks applications in Kenya? **6 marks**
- b) Explain the types of agents used in the domain of robotics of your choice. **6 marks**
- c) Autonomy of intelligent agents implies that an agent takes initiative and exercises control over its own action. Explain how an agent should show its autonomy. **8 marks**