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**KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR**  
**THIRD YEAR, FIRST SEMESTER EXAMINATION**  
**FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY**

Date: 29<sup>th</sup> July, 2022  
Time: 11.30am –1.30pm

**KBI 2301 - COMPUTER MODELING OF DECISIONS**

**INSTRUCTIONS TO CANDIDATES**

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**ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

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**QUESTION ONE (30 MARKS)**

- a) State any four Quantitative Techniques for decision making (2 marks)
- b) Define the following terms as used in Modelling for decision:
  - i) Data model (2 marks)
  - ii) Information model (2 marks)
  - iii) Adaptive systems (2 marks)
- c) Distinguish between knowledge and information (4 marks)
- d) Illustrate the three requirements for an adaptive system (6 marks)
- e) State any four differences between an Actual System and a Model (8 marks)
- f) Strategic decisions need analysis and in-depth study, True or False? Discuss your answer. (4 marks)

**QUESTION TWO (20 MARKS)**

- a) Discuss the Predator – Prey System (10 marks)
- b) Determine which quantitative techniques for decision making do the following characteristics relate to. (4 marks)
  - i) This technique reduces waiting periods and the expenses they involve:
  - ii) The aim of this technique is to basically reduce wastage of time, energy and money in complex activities:
  - iii) This technique relies on probabilities instead of exact and accurate outcome:
  - iv) Managers generally use this technique in situations of business rivalries or conflicts:
- c) Illustrate the six steps for Systematic Approach Problem Solving process. (6 marks)

**QUESTION THREE (20 MARKS)**

- a) Discuss the Rational decision-making model (12 marks)
- b) Explain the three types of Cases in Scenario Analysis (6 marks)
- c) Define the term system. (2 marks)

**QUESTION FOUR (20 MARKS)**

- a) State the steps for decision making process. (7 marks)
- b) Illustrate how Scenario Analysis Works (7 marks)
- c) Discuss the three levels that Data modeling occurs at. (6 marks)

**QUESTION FIVE (20 MARKS)**

- a) Discuss six steps to perform a Scenario Analysis (12 marks)
- b) State any four applications of sensitivity analyses 4 marks)
- c) Explain any four processes which we can model with complex adaptive systems. (4 marks)