CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF COMMERCE

BCOM 467: SIMULATION FOR OPERATIONS MANAGEMENT

STREAMS: BCOM Y4S1   **TIME: 2 HOURS**

DAY/DATE: THURSDAY 23/09/2021   **2.30 P.M – 4.30 P.M.**

INSTRUCTIONS:
- **Answer question ONE and any other TWO questions.**
- **Do not write anything on the question paper**

QUESTION ONE

(a)   You have recently been employed by a medium size company and deployed in the operations department. Your head of section has given you the responsibility of training new interns on various activities undertaken in the operations department. Explain to them the various stages involved in simulation.   (14 marks)

(b)   Today organizations finds if necessary to use standard computer software to simulate and model their products and processes. Explain the benefits derived from the use of computers   in simulation processes.   (10 marks)

(c)   Write short notes on the following terminologies as used in simulation for operations management;

        (i)   Simulation   (2 marks)
        (ii)   State   (2 marks)
        (iii)   System   (2 marks)

QUESTION TWO

(a)   Discuss any five reasons that explain why managers choose to use simulation in making tactical or operations decisions.   (10 marks)

(b)   Optimal results are only achieved in simulation of inventory control system when various key factors are taken into consideration. Discuss any five of these key factors. (10 marks)

QUESTION THREE

(a)   Discuss the main characteristics of a queuing system, that impact its performance i.e. Queuing order, waiting time and service time.   (10 marks)

(b)   Explain any five benefits derived by a firm from simulating its manufacturing systems.
                                                                                    (10 marks)

QUESTION FOUR

(a)   Explain the meaning of the term 'model validation' as used in simulation for operations management and describe how face validation can be done.   (5 marks)

(b)   Describe the application of Monte Carlo simulation in finance and other business operations.   (10 marks)

(c)   Outline the challenges faced by organizations while simulating customer service processes.
                                                                                    (5 marks)