JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BUSINESS & ECONOMICS

UNIVERSITY EXAMINATION FOR THE CERTIFICATE OF BUSINESS ADMINISTRATION

1ST YEAR 1ST SEMESTER 2024 ACADEMIC YEAR

MAIN CAMPUS

COURSE CODE: BCA 2112

COURSE TITLE: INTRODUCTION TO BUSINESS MATHEMATICS

EXAM VENUE: MAIN

DATE: **EXAM SESSION:**

DURATION: 1HOUR 30 MINUTES

INSTRUCTIONS

1. **Answer QUESTION ONE and any other TWO questions**
2. **Show all your workings.**
3. **Do not write anything on the question paper**

DURATION; 1 HOUR 30 MINUTES.

QUESTION ONE

If universal set is given as S= {1,2,3,4,5,6} , and A={1,2} B={2,4,5} C={1,5,6} are three sets, Find the following sets;

a) A U B (5mks)
b) A n B (5mks)
c) A Compliment (5mks)
d) B complement (5mks)
e) Elements of sets A , B and C (6mks)
f) Is set C empty? Give reason for your answer (4mks)

QUESTION TWO

Given that set A= {4, 5, 6) and B = {6, 7, 8}, find

i) Symmetric difference of sets A and B (5mks)
ii) P(A) (5mks)
iii) Find A U B, then represent your answer in Venn diagram (10mks)

QUESTION THREE

Given T= {1, 2, 3} and S= {3, 5}

Calculate;

a) T-S (5mks)

b) T+S (5mks)

c) State whether or not the two sets are mutually exclusive/ disjoint (10mks**)**

QUESTION FOUR

Given that Sets A= {1, 2} B= {3, 4}

i) State with reason, whether set A and B disjoint or not (5mks)
ii) Represent (i) in Venn diagram (5mks)
iii) Find A U B (5mks)
iv) Calculate Cartesian product of A and B (5mks)

QUESTION FIVE

a) Explain five applications of set theory (10mks)
b) What is
   i) Proper set (5mks)
   ii) Set Compliment (5mks)