ALUPE UNIVERSITY COLLEGE

...Bastion of Knowledge....

OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, RESEARCH AND STUDENT AFFAIRS

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

SECOND YEAR SECOND SEMESTER REGULAR EXAMINATION

FOR THE DEGREE OF BACHELOR OF EDUCATION

COURSE CODE: CIM 212

COURSE TITLE: MATHEMATICS EDUCATION 1

DATE: 7TH JUNE 2022   **TIME: 2:00PM – 5:00PM**

INSTRUCTION TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF THREE PRINTED PAGES   PLEASE TURN OVER

CIM 212: MATHEMATICS EDUCATION I

__STREAM: BED (SCIENCE)__   __TIME: 3HRS__

INSTRUCTIONS TO CANDIDATES

- Answer Question One and any other Two

- Do not write on the question paper

QUESTION ONE

a) State and explain FOUR General objectives of teaching mathematics in Kenya secondary schools   (8marks)

b) Explain FOUR reasons why instructional objectives are important in mathematics   (8marks)

c) Explain FIVE reasons why a teacher would prepare a lesson plan before embarking on an instructional process   (5marks)

d) Distinguish between cognitive and stimulus response theories   (2marks)

e) Identify two roles of a teacher in deductive teaching approach   (2marks)

f) State FIVE major pitfalls that may arise from failing to plan for instruction   (5marks)

QUESTION TWO

a) State and Explain FOUR cognitive entities according to Brunner   (8marks)

b) Explain four implications of Brunner's cognitive theory of learning on mathematics   (4marks)

c) Identify and explain four stages of cognitive development according to Jean Piaget   (8marks)

QUESTION THREE

a) Robert M. Gagne gives different categories of learning outcomes. He does not propagate broad areas of learning such as domains, instead he describes the types of capabilities a learner will acquire after undergoing learning. State and explain FOUR capabilities advanced by Gagne (8marks)

b) Design a lesson plan lasting FORTY minutes to include administrative details on :
   Topic: Surds
   Subtopic: Addition of Surds
   CLASS : FORM 3N (12 marks)

QUESTION FOUR

a) Making of a scheme of work is the skill of breaking down the syllabus into teachable units. Explain the process of preparing a scheme of work (12 marks)

b) Design a TWO week mathematics schemes of work on a topic of your choice. Indicate administrative details on the scheme of work (8marks)

QUESTION FIVE

a) Explain FOUR steps followed in using deductive method in teaching mathematical skills. (12marks)

b) Using an example, demonstrate the application of Deductive method in the teaching of mathematics (8marks)