



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

THIRD YEAR

SPECIAL/SUPPLEMENTARY EXAMINATION

**FOR THE DEGREE OF BACHELOR OF EDUCATION (ARTS) &
BACHELOR OF EDUCATION (SCIENCE)**

COURSE CODE: ESM 311

COURSE TITLE: MATHEMATICS EDUCATION

DATE: 16TH NOVEMBER 2022

TIME: 2.00 - 4.00pm

INSTRUCTIONS TO CANDIDATES

Answer Question One and any other TWO Questions

TIME: 2 Hours

This Paper Consists of 2 Printed Pages. Please Turn Over.

QUESTION ONE (30 MARKS)

- a) Define the following terms as used in Mathematics education. (3 Marks)
 - i) Mathematics
 - ii) Mathematics Education
 - iii) Teaching Approach
- b) State any **four** reasons why history of mathematics is not in the curriculum (4 Marks)
- c) How can a mathematics teacher decide on which best teaching method to be used in a given method? (4 Marks)
- d) Give **four** justifications for project work as a method of teaching mathematics. (4 Marks)
- e) State **three** purposes of evaluation in mathematics instruction (3 Marks)
- f) State the four main stages of problem solving (4 Marks)
- g) Lecture is an instructional method involving one way communication from the active presenter. In which **four** ways can you improve lecture in teaching of mathematics. (4 Marks)
- h) State any **four** reasons of under achievement and under representation of women in Mathematics (4 Marks)

QUESTION TWO (20 MARKS)

- a) Using relevant examples, discuss the main cognitive apprenticeships in mathematics instructional process (12 marks)
- b) Explain any **four** qualities of a good mathematics textbook as an instructional resource (8 Marks)

QUESTION THREE (20 MARKS)

Discuss the contribution of Robert Gagne to the development of mathematics curriculum in Kenya (20 marks)

QUESTION FOUR (20 MARKS)

- a) Describe **six** Components of an ideal Mathematics Laboratory. (12 Marks)
- b) Explain any **four** purposes of classroom assessment in a mathematics lesson. (8 Marks)

QUESTION FIVE (20 MARKS)

- a) By use of relevant examples explain **five** reasons some students perform poorly in mathematics. (10 Marks)
- b) Use Pythagoras theorem as a sub topic to construct a 40 minutes mathematics lesson plan. (5 Marks)
- c) Describe **five** effecting ways of teaching mathematics content. (5 Marks)