

300



(Knowledge for Development)

KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR
THIRD YEAR SEMESTER ONE
MAIN EXAMINATION**

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

COURSE CODE: ESM 311

COURSE TITLE: MATHEMATICS EDUCATION

DATE: 16/7/2021AD TIME: 2:00PM-4:00PM

INSTRUCTIONS TO CANDIDATES

Answer Question One and any other TWO Questions

TIME: 2 Hours

This Paper Consists of 3 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) Assessment is a very important activity in high schools, state **three** purpose of evaluation at the level of teaching mathematics. (3 Marks)
- f) Apply completing square method to find the value of x in the function $x^2 + 6x + 14 = 0$ (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) Explain any **five** qualities of resources best for teaching mathematics. (10 Marks)
- b) Discuss any **five** of dangers Mathematics text book teaching. (10 Marks)

QUESTION THREE (20 MARKS)

- a) State any and explain **five** advantages of applying heuristic approach in teaching mathematics. (10 Marks)
- b) Many high school students find it difficult to master the concept of perimeter, as a mathematics teacher design for them hands on mathematics activities that can enable them to master the concept easily. (10 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)