KIBABII UNIVERSITY COLLEGE (KIBUCO)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS
2014 /2015 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER EXAMINATIONS

FOR THE DEGREE

OF

BACHELOR EDUCATION (ARTS)

COURSE CODE: ESM 311

COURSE TITLE: MATHEMATICS EDUCATION

DATE: 13TH JANUARY 2015   **TIME: 8.00-10.00 A.M**

INSTRUCTIONS TO CANDIDATES:

Answer Question ONE and any other Two Questions

TIME: 2 Hours

QUESTION ONE

a) Citing suitable examples, explain four key steps according to George Polya's model
(8 marks)
b) State any **THREE** reasons why we have to each our students how to solve problems in mathematics (6 marks)
c) Discuss at least **THREE** implications of problem solving model in the teaching and learning of mathematics (6 marks)
d) Explain briefly **THREE** different types of discovery learning (6 marks)
e) State 4 factors one would consider when selecting a teaching and learning resource in mathematics instruction (4 marks)

QUESTION TWO

a) Explain any **SIX** qualities of a good mathematics text book (12 marks)
b) Outline briefly the evolution (historical development) of secondary school mathematics curriculum in Kenya (8 marks)

QUESTION THREE

a) State **FIVE** principles of constructivist theory in the learning of mathematics (5 marks)
b) Briefly discuss three modes of representation according to Jerome Brunner's and give the implications of his work to Mathematics curriculum. (15 marks)

QUESTION FOUR

a) Discuss any **THREE** reasons for assessing learners in mathematics. (6 marks)
b) Using suitable examples, describe any **SEVEN** challenges in learning and teaching various KCSE mathematics concepts. (14 marks)

QUESTION FIVE

a) List and discuss any **FIVE** roles of teaching and learning resources in mathematics instruction in secondary schools (15 marks)
b) Using suitable examples, justify the inclusion of the topic 'Measurement' in the mathematics curriculum (5 marks)