



MACHAKOS UNIVERSITY

University Examinations 2016/2017

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, SPECIAL NEEDS EDUCATION
AND EARLY CHILDHOOD EDUCATION

THIRD YEAR SECOND SEMESTER EXAMINATION FOR BACHELOR OF
EDUCATION

ECE 304: METHODS OF TEACHING SCIENCE AND MATHEMATICS IN EARLY
CHILDHOOD EDUCATION

DATE: 25/7/2017

TIME: 11:00 – 1:00 PM

INSTRUCTIONS

Answer Question One and Any Other Two Questions

QUESTION ONE (30 MARKS)

- a) Explain the meaning of the following as used in this unit
 - i. Science
 - ii. Mathematics
 - iii. Inquiry
 - iv. Hypothesis
 - v. Constructivism (5 marks)
- b) Describe the theoretical basis for teaching science and mathematics (5 marks)
- c) Explain five reasons why children need to be exposed to science skills in early childhood (5 marks)
- d) Identify five roles of a science teacher in a science lesson (5 marks)
- e) List five general objectives of teaching mathematics in early childhood education (5 marks)

QUESTION TWO (20 MARKS)

Citing relevant examples, describe characteristics within the children that make science learning a natural activity. (20 marks)

QUESTION THREE (20 MARKS)

Explain how a science and mathematics lesson plan can be evaluated for effective teaching and learning. (20 marks)

QUESTION FOUR (20 MARKS)

Examine strategies that preschool teachers should use in implementing a science lesson (20 marks)

QUESTION FIVE (20 MARKS)

Develop a lesson plan for teaching one mathematics activity. Clearly highlight the steps to follow. (20 marks)