



# MACHAKOS UNIVERSITY

University Examinations 2022/2023

SCHOOL OF EDUCATION

DEPARTMENT OF EARLY CHILDHOOD EDUCATION COMMUNICATION AND  
TECHNOLOGY

SECOND YEAR ..... SEMESTER EXAMINATION FOR  
BACHELOR OF EDUCATION (EARLY CHILDHOOD EDUCATION)  
ECE 213: SCIENCE AND MATHEMATICS IN EARLY CHILDHOOD.

DATE:

TIME:

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## INSTRUCTIONS

Answer Question One and Any Other Two Questions

### QUESTION ONE (COMPULSORY) (30 MARKS)

- (a) Define the following terms: (5 marks)
- (i) Science
  - (ii) Mathematics
  - (iii) Rote counting
  - (iv) Biological science
  - (v) Binary operation.
- b) Give **five** implications of Piaget's theory for teaching and learning Science and Math in Early Childhood Education. (5 marks)
- c) Give **Five** activities that help children understand the concept of:
- (i) Ordering. (2 marks)
  - (ii) Sorting. (3 marks)
- d) List **five play activities** that influence scientific and mathematical creativity in children. (5 marks)
- e) You intend to teach plants and water to your class. Identify:

(i) Resources needed. (5 marks)

(ii) Activities to be used. (5 marks)

**QUESTION TWO (20 MARKS)**

Science and Math skills are still very low among learners. As a pre- school teacher outline and discuss **five** ways you would enhance the learning of Science and Mathematics in your Centre.

**QUESTION THREE (20 MARKS)**

Exploration and discovery is important in learning science in ECE. Discuss ways you would employ to promote learning through exploration and discovery in your school.

**QUESTION FOUR (20 MARKS)**

Explain how you would teach the following concepts to pre- school children:

(i) Weight (6 marks)

(ii) Volume (6 marks)

(iii) Matching and comparing. (8 marks)

**QUESTION FIVE (20 MARKS)**

Describe **five** activities you would employ to teach the concept of spatial geometry to pre-school children.