



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:

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.