



MACHAKOS UNIVERSITY

University Examinations 2020/2021 Academic Year

SCHOOL OF EDUCATION

DEPARTMENT OF EARLY CHILDHOOD EDUCATION

APRIL SESSION EXAMINATION FOR

BACHELOR OF EDUCATION (EARLY CHILDHOOD)

ECE 304: METHODS OF TEACHING SCIENCE AND MATHEMATICS IN ECE

DATE: 23/7/2021

TIME: 8.30-10.30 AM

INSTRUCTIONS

Answer Question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

- a) Explain any four (4) reasons as to why the CBC is a better approach to the development of Science and Maths in ECE. (8 marks)
- b) Describe how a **Teaching Method that emphasises experiential and relational learning** can be applied to the teaching of **Prenumber Activity in ECE**. (6 marks)
- c) Given the Sub-Strand: **Sorting and Grouping**, prepare a 30-minute lesson plan suitable for a PP1 class. Include the following:
 - i. Three specific learning outcomes. (3 marks)
 - ii. Three key inquiry questions. (3 marks)
 - iii. Learning resources to be used. (3 marks)
 - iv. Lesson organization: Introduction; development; extended activities; and conclusion. (7 marks)

QUESTION TWO (20 MARKS)

- a) Briefly explain the essence of each of the following **phases of scientific Investigation**:
 - i. Defining the problem. (3 marks)
 - ii. Choosing a method. (2 marks)
 - iii. Arriving at solutions. (3 marks)
- b) Outline the steps you would follow in planning for **an outdoor activity** that integrates Maths, Science and Environmental aspects of learning. (12 marks)

QUESTION THREE (20 MARKS)

- a) Explain how the teaching of Maths and Science may contribute to the development of children. (10 marks)
- b) Choose a Sub-strand from the ECE maths/ Science curriculum and describe how you would teach it using the **Dramatization and Role Play Method**. Include: preparation; resources; organization and implementation; as well as assessment of learning outcomes. (10 marks)

QUESTION FOUR (20 MARKS)

Explain the significance of each of the following components of a Lesson Plan:

- a) The Expected Learning Outcomes.
- b) The Key Inquiry Questions.
- c) The Learning Activities.
- d) The Teaching Resources.
- e) The Remarks/self-evaluation/reflection.

QUESTION FIVE (20 MARKS)

Write a brief essay on **one** of the following topics:

- a) Competencies in the Competence-Based Curriculum.
- b) Assessment of procedures in the CBC.
- c) Values in the Competence-Based Curriculum.