MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations 2015/2016

SCHOOL OF EDUCATION

DEPARTMENT OFCOMMUNICATION TECHNOLOGY

SECOND SEMESTER EXAMINATION FOR DEGREE OF BACHELOR OF EDUCATION

METHODS OF TEACHING SCIENCE AND MATHEMATICS IN EARLY CHILDHOOD

Date: 2/8/2016 **Time: 8.30-10.30 AM**

INSTRUCTIONS

Answer Question ONE and any other TWO Questions

SECTION A: ANSWER ALL THE QUESTIONS IN SECTION A (30 MARKS)

1. a) Briefly describe three advantages of teaching science by first-hand experience. (6 marks)

   b) i) What is a spiral curriculum? (1 mark)

   ii) Briefly draw a spiral curriculum for teaching the concept of volume from preschool to primary standard four. (5 marks)

   c) Briefly describe three things you would consider when using experiments to teach science in Early Childhood. (6 marks)

   d) i) What is a "model"? (1 mark)

   ii) State five characteristics of a good model in the teaching of science in Early Childhood. (5 marks)

e) Describe three activities you would use to teach 5-6 year olds "Number Value- 3". (6 marks)

SECTIONB: ANSWER ANY TWO QUESTIONS IN THIS SECTION (40 MARKS)

2. a) Develop a 20 minutes lesson plan for teaching number recognition to 4-5 year olds (10 marks)

   b) Describe in detail one of the activities you would use in your lesson in 6 (a) above, stating exactly how you would conduct it with the children (10 marks)

3. One of the goals of science activities in preschool is "To enable children to hypothesis. ".

   i) Explain fully why this objective is important at this level. (8 marks)

   ii) Describe the strategies you would use in your efforts to achieve this objective with 5-6 year olds. (12 marks)

4. John and Mark are preschool teachers with differing theoretical inclinations. John is a "behaviouralist" and Mark is a "constructivist". Explain fully the differences you would expect between John and Mark's preschool mathematics classroom with relevant examples. (20 marks)

5. Piaget's theory has very important implications for the teaching of young children. Evaluate these implications for the teaching of science in preschool. (20 marks)