MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR
THIRD YEAR FIRST SEMESTER

SCHOOL OF EDUCATION
BACHELOR OF EDUCATION

COURSE CODE: ECI 3116

COURSE TITLE: MATHEMATICS TEACHING METHODS

DATE: 1ST APRIL, 2022   **TIME: 1430-1630**

INSTRUCTIONS TO CANDIDATES
Answer questions A and any other three questions in section B.

SECTION A

1. (a) Distinguish between course objectives and instructional objectives giving an example in each. (5 marks)
   (b) State the four major criteria for a properly stated lesson objective.(4 marks)
   (c) Discuss three advantages of a lesson plan to a mathematics teacher. (5 marks)
   (d) Prepare a 40 min lesson plan on any topic in form one in the KCSE mathematics. (6 marks)
   (e) Show by inductive approach how you would teach a form one student that a^0 = 1. (5marks)

Section B

2. Piaget advocates that intellectual development in children occurs in stages according to the chronological age.
   (a) Name the four stages in hierarchical order and discuss the relevant intellectual abilities at each stage giving examples in mathematics where possible. (5 marks)
   (b) In light of Piaget's theory explain any two conditions you have to consider while teaching and learning of mathematics. (5 marks)
   (c) Give three possible explanations for different in mental abilities of children of the same age. (5 marks)

3. (a) Give any five reasons for using problem solving technique in the teaching and learning of mathematics. (7 marks)
   (b) Polya 1957, Bell and burton 1984 have each developed a problem solving model which can be employed in solving mathematics problems. By making references to the three models, generate your own model for solving problem model. (8 marks)

4. (a) By giving relevant mathematics examples distinguish between two dimension and three dimensional instructional materials. (3 marks)
   (b) Explain any four criteria that would determine each of the following
       I.   Selection of teaching and learning aids for use in mathematics lesson. (4 marks)
       II. Effective use of the selected teaching and learning aids in mathematics. (4 marks)
   (c) By using relevant examples explain four reasons for using teaching and learning aid in mathematics instruction. (4 marks.)

5. [a]Discuss the factors that you consider when preparing an exam [5 marks]
   [b] Examine the rationale of teaching mathematics teaching methods [10 marks]

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