MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS

2023/2024 ACADEMIC YEAR

THIRD YEAR FIRST SEMESTER

SCHOOL OF EDUCATION

COURSE CODE: ECI 3116

COURSE TITLE: MATHEMATICS SUBJECTS METHODS

DATE: 7/12/2023 **TIME: 0830-1030 HRS**

INSTRUCTIONS TO CANDIDATES

*This paper consists of **TWO** printed pages. Please turn over*

Answer Question **ONE** and any other **TWO** questions

1. Debate briefly how you would use to teach number patterns in mathematics using each of the following methods.

a. Demonstration **(3marks)**
b. Problem solving **(3marks)**
c. Supervised practice **(3marks)**
d. Instructional objectives are necessary in the teaching process. Justify this statement with reference to three roles of instructional objectives in teaching of mathematics in secondary school. **(3marks)**
e. Explain Blooms cognitive levels which can be used in the setting, mathematics examination questions. **(5marks)**
f. Describe ZoltanDienes contribution to the theory and practice of mathematics education. **(3marks)**

2. a). Explain the importance of a wellprepared lesson plan in the teaching of quadratic equations. **(8marks)**

b). Planning is vital for successful teaching. Explain this statement highlighting the different considerations which mathematics teachers should emphasize in a successful lesson plan. **(7marks)**

3a). Find the value of x and y in the following simultaneous equations using matrix method.

$3x - y = 2.$ **(3marks)**
$X + y = 4$

b). Prepare a marking scheme of the problem above; explain how you would award mark **(5marks)**

c). In 2003, the Kenya institute of education (KIE) published twelve objectives for secondary school mathematics. One of the objectives is, **"**Develop a positive attitude towards mathematics**."** Explain how you can help your students realize this objective. **(7marks)**

4. Explain briefly how you would use each of the following methods in mathematics lessons on Angles.

a. Question and answer **(4marks)**
b. Exposition. **(4marks)**
c. Discussion **(4marks)**
d. Discovery **(3marks)**

5. a) Describe three main components of instructional objectives giving one example in each case. **(7marks)**

b). Distinguish between mathematics and mathematics education. **(2marks)**

c). Theteaching of mathematics can be taught through <u>inductive</u>or <u>deductive</u> approaches. Using suitable examples explain the underlined terms. **(6marks)**

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