



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

THIRD YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION ARTS WITH INFORMATION TECHNOLOGY

MAIN CAMPUS

ECT 311: METHODS OF TEACHING MATHEMATICS

Date: 13th February, 2018

Time: 3.30 - 6.30pm

INSTRUCTIONS:

- Answer Question ONE (Compulsory) and any other THREE.



QUESTION ONE

- a) Justify the inclusion of Mathematics discipline in the education system. [5marks]
- b) Formulate a specific instructional objective and identify the four main components. [5marks]
- c) State three advantage and two disadvantages of peer-teaching in mathematics lessons. [5marks]
- d) Identify five factors that a teacher of Mathematics has to consider in the selection and use of instructional resources. [5marks]
- e) (i) why is a quiz important at the beginning of a Mathematics lesson? [2 marks]
- (ii) Support the view that adequate planning is mandatory in the teaching and learning of Mathematics. [3 marks]

QUESTION TWO

- a) Describe three ways in which a teacher of Mathematics would stimulate learning through discovery methods. [6marks]
- b) Outline the activities a teacher would involve learners to establish that $\pi = \frac{22}{7}$ and circumference is equal to the product of π and diameter(D) stating the background knowledge needed and the instructional resources to be used. [7marks]
- c) Distinguish between instructional and relational understanding in the learning of mathematics. [2marks]

QUESTION THREE

- a. (i) Using a suitable word problem explain the four steps in Mathematics problem solving. [8marks]
- (ii) Identify any two difficulties that mathematics learners encounter in solving word problem. [4marks]
- b. Explain three instances where the mathematical problem –solving skills are applied in daily-life situations. [3 marks]

QUESTION FOUR

- a) Discuss four factors that hinder girls achievement and women's participation in Mathematics and related curricular areas in Kenya. [8marks]
- b) Suggest seven ways on how a teacher of mathematics would create a conducive learning culture in Mathematics' class. [7marks]

QUESTION FIVE

- (a) Why is a specification grid (table) necessary in the construction of Mathematics test items? [4 marks]
- (b) What factors affect effective assessment of learner achievement in Mathematics in secondary schools in Kenya? [3marks]
- (c) A form one class was assigned the following item;
- (The cost of two shirts and three pairs of trousers is Ksh.960, while that of one shirt and two pairs of trousers is Ksh 640. How much will one pay for one shirt and one pair of trousers? [4 marks]
- (i) Make an appropriate marking scheme. [6marks]
- (ii) What difficulties may the learners encounter? [2marks]

QUESTION SIX

- (a) Define Mathematics and Mathematics education. [3marks]
- (b) Discuss three factors that have influenced the development of mathematics discipline. [6marks]
- (c) Why is the knowledge of History of Mathematics important to the Mathematics learners [6marks]