

MACHAKOS UNIVERSITY COLLEGE

SCHOOL OF EDUCATION

DEPARTMENT OF COMMUNICATION AND TECHNOLOGY

SECOND YEAR, SECOND SEMESTER EXAMINATIONS

DIPLOMA IN EDUCATION

ECT 0212 – TEACHING METHODS IN MATHEMATICS

Date

Time

Instructions

Attempt question **one** which is a compulsory question and any other **two** questions.

1. (a) Outline four objectives of teaching mathematics. (4 marks)  
(b) Explain the purpose of teaching resources in mathematics (7 marks)  
(c) Explain five limitations of the secondary school maths syllabus (10 marks)  
(d) Explain the difference between the following tools in mathematics instruction  
(i) Mathematics syllabus  
(ii) Mathematics scheme of work  
(iii) Mathematics lesson plan (9 marks)
2. (a) Discuss why most teachers do not complete the syllabus yet they have options to choose the strategies. (7 marks)  
(b) Explain why it is important for a mathematics teacher to plan for teaching. (7 marks)  
  
c) One of the objectives of teaching mathematics in secondary schools in Kenya is to develop the ability to communicate precisely in symbolic form. Discuss. (6 marks)
3. a) Contrast between behaviorist and constructivist theories. (4 marks)  
  
(b) Explain the meaning of the following terms citing an example in each term.  
(i) Formative assessment  
(ii) Summative assessment (6 marks)  
(c) Using Algebra topic and the subtopic simultaneous equations in two unknowns. Prepare a forty minutes lesson plan. (10marks)
- 4 a) Using relevant illustrations, define the following terms as used in teaching Mathematics:-  
(i) Inductive Approach  
  
(ii) Deductive Approach (6 marks)

(b) Discuss how a teacher may use inductive approach in teaching Pythagoras theorem. (6 marks)

c) What are the primary purposes of using resource in the teaching of mathematics in secondary schools.(8 marks)

5. (a) Differentiate between cognitive, affective and psychomotor objectives. (4 marks)

(b) Explain each of the following terms as relates to mathematics curriculum of secondary school.

- Curriculum as intended
- Curriculum as implemented
- Curriculum as attained

(6 marks)

(c) Explain five roles of mathematics textbook in the classroom. (10 marks)