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UNIVERSITY EXAMINATIONS 2023/2024

FIRST YEAR SECOND SEMESTER EXAMINATION FOR DIPLOMA IN POST GRADUATE
EDUCATION

ECG 4151: MATHEMATICS SUBJECT METHODS

DATE: APRIL 2024

TIME: 2 HOURS

INSTRUCTIONS: Answer Question ONE and any other THREE questions.

QUESTION ONE (24 MARKS)

- a. Explain the difference between the following tools in mathematics instruction
 - i. Mathematics syllabus
 - ii. Mathematics scheme of work
 - iii. Mathematics lesson plan(6 marks)
- b. Explain four purpose of classroom assessment in mathematics instruction. (4 marks)
- c. Discuss the rationale behind the practice of teaching mathematics to the society. (4 marks)
- d. Explain four reasons why supervised practice is important in the teaching and learning of mathematics. (4 marks)
- e. Inquiry Based Learning (IBL) has been cited as an effective method for teaching mathematics to secondary school students. Justify the statement. (6 marks)

QUESTION TWO (12 MARKS)

- a. The mathematics curriculum has been criticized. Explain three shortcomings of mathematics (6 marks)
- b. One of the roles of the head of a department in a school is to advise the head of the institution on the required textbooks. Examine six contributions of a good mathematics text book you could consider when discharging this role. (6 marks).



QUESTION THREE (12 MARKS)

- a. One of the course objectives of learning mathematics at secondary school in Kenya is to enable the learner to "Perform mathematical operations and manipulations with confidence, speed and accuracy". Explain how you would accomplish the above targets in teaching mathematics in Kenya. (6 marks)
- b. Elaborate on factors that the mathematics teacher needs to consider when preparing schemes of work. (6 marks)

QUESTION FOUR (12 MARKS)

- a. List and discuss any six roles of teaching and learning resources in mathematics. (6 marks)
- b. Suggest and discuss six ways of helping learners cope with problem of mathematics anxiety. (6 marks)

QUESTION FIVE (12 MARKS)

- a. Using a suitable example drawn from secondary school syllabus, demonstrate how you would apply structured Inquiry Based Learning in the teaching of mathematics. (6 marks)
- b. The Competency Based Curriculum (CBC) has emphasized the need of integrating values during the teaching and learning processes. Identify any six values and explain how you can help the students to acquire them during a mathematics lesson. (6 marks)

