



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

INSTITUTIONAL BASED PROGRAMME (DECEMBER SESSION)

EXAMINATION FOR THE DEGREE POST GRADUATE DIPLOMA IN EDUCATION

ECT/PG/22: MATHEMATICS METHODS

DATE: WEDNESDAY, 2ND MAY 2012

TIME: 4.30 P.M – 6.30 P.M

INSTRUCTIONS:

Answer Question ONE and TWO others

1. (a) Explain how the Fallibilist philosophy of mathematics differ from the absolutist philosophy. [6 marks]
 (b) Discuss the main features of an effective school mathematics curriculum
 (c) State three objectives of secondary school mathematics
 (d) State the Vann Hiele levels of spatial development. [6 marks]
 (d) Describe the different classifications of resources that can be used in teaching mathematics. [6 marks]
2. (a) Give five reasons why mathematics education is considered an important subject in the school curriculum. [10 marks]
 (b) What other appeals other than utility are provided through mathematics learning. [10 marks]
3. Discuss the parallels in behaviorist and constructive instructional theories. Briefly describe how these two relate to information processing theory. [20 marks]

4. (a) Discuss the assessment principles in mathematics education ? What other assessment methods can be adapted besides paper and pencil tests.[14 marks]
- (b) Discuss the difference between the Relational understanding and instrumental understanding. [6 marks]
- 5 (a) A student who constantly states the following identity $(a + b)^2 = a^2 + b^2$ as correct can be assisted by using geometry . Explain how this can be done. [8 marks]
- (b) Write a lesson plan that you could practically use to demonstrate to students this identity. [12 marks]