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NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF EDUCATION

JANUARY 2018, 2017_2 EXAMINATION

COURSE CODE: EDU740
COURSE TITLE: MATHEMATICS METHODS
Instructions: Answer question one (1) and any other two questions.
Time Allowed: 2 Hours
UNITS: 2 units

1. a. In not more than two sentences in each case, what do the following expressions mean?

   (i) Taxonomy of Educational Objectives

   (ii) Cognitive Domain

   (iii) Scheme of work

   (iv) Montessori's Education System

   (v) Learning aid. (2 Marks each = 10Marks)

1. b. (i) List the criteria for selection of teaching aid for mathematics lessons (10Marks)

   (ii) Analyse the comparative effectiveness of laboratory methods of teaching mathematics over discovery and traditional methods (6 Marks)

   (iii) State two previous knowledge required for using laboratory method to teach deduction of length of a right angled triangle as 3x, 4x and 5x where x is a positive integer. (4 Marks)

2. a. Enumerate the contributions of each of the following persons to the development of mathematics.

   (i) Pythagoras (3 Marks)
   (ii) Archimedes (3 Marks)
   (iii) Blaise Pascal (3 Marks)

   b. (i) Briefly distinguish between guided discovery and open discovery methods of teaching mathematics. (5 Marks)

   (ii) Explain the steps a mathematics teacher should take to avoid problems associated with guided discovery lesson. (6 Marks)

3. a. What constitute a good behavioural objectives for teaching mathematics? (10 Marks)

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b. Analyse and comment on the correctness or otherwise of the statement of behavioural objective:- "The student should know the quadratic formula that for $ax^2 + bx + c = 0$ where $a \neq 0$, $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ (10 Marks)

4. (a) Briefly discuss the three major variables that a secondary school mathematics teacher should consider in order to write a good note of lesson. (10 Marks)

b. (i) State three (3) advantages of discovery method of teaching mathematics (6 Marks)

(ii) What cautions must be taken by a mathematics Teacher to forestall the problems associated with use of discovery method. (4 Marks)

5. (a) (i) What is meant by entry behaviour for teaching a concept in mathematics? (3 Marks)

(ii) State one entry behaviour for teaching Pythagoras theorem? (2 Marks)

(b) (i) Why must a mathematics teacher write a lesson note? (5 Marks)

(ii) In what order of necessity is the format for writing the note of lesson? (10 Marks)

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