UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER May 2009:   BED II PRIMARY

COURSE NUMBER: PEC 276

COURSE NAME: CURRICULUM STUDIES: MATHEMATICS

TIME ALLOWED: 3   HOURS

INSTRUCTIONS: 1.   THIS PAPER HAS FIVE QUESTIONS.

2.   ANSWER QUESTION 1 AND ANY TWO OTHER
QUESTIONS.

3.   DOCUMENTS REFERRED TO IN SOME OF THE
QUESTIONS ARE ATTACHED. IF YOU CAN'T FIND
THEM ASK FOR THEM.

4.   ANY PIECE OF MATERIAL WHICH IS NOT FOR
MARKING PURPOSES MUST BE CROSSED OUT
CLEARLY.

SPECIAL REQUIREMENTS: NCC MATHEMATICS BOOK

THIS PAPER MUST NOT BE OPENED UNTIL PERMISSION IS GIVEN BY THE
INVIGILATOR

Answer question 1 and any **two** other questions.

Question 1   (Compulsory)

a)   A Grade IV class is given some mathematic calculations to do.

      5 7 x 4 8

      In giving answers to the questions 5 students made the following errors:

      A   false regrouping,
      B   omit regrouping
      C   wrong addition
      D   wrong multiplication
      E   wrong place value alignment
      F   adding in the wrong direction

      Match the names of students to the calculation errors they made. For each student show how the wrong answers are reached. Write the name of the student and the letter corresponding to the error made in each case for your answer.

            For example;   Job D   (15)

Name	answer given
Cebi	684
Dave	2636
Freda	3736
Langa	2637
Sipho	2434

b)   According to Piaget, children need to develop certain abilities before they can handle mathematical calculations. To learn to multiply meaningfully, child needs to have achieved the development **all but one** of the following abilities

      A   logical classification
      B   Sereation
      C   Reversibility of thought
      D   Invariance of number   (1)

c)   Which of the following illustrate the commutative or associative property of addition?
     Do not copy the question but write the number and the word. (e.g. v associative)

     i. $3 + 4 + 5 = 2 + 5 + 4$ ii $(2 + 4) + 5 = 2 + (4 + 5)$ (2)

     What is ½ of zero?   (3)

d)   Match the description in the column A to the appropriate teaching method in column
     B. Write the number and the teaching method for your answer.

          i.   Direct teacher-centred
          ii.   Indirect teacher-centred
          iii.   Direct learner-centred
          iv.   Indirect learner-centred.   (4)

e)   Write **one or two** sentences to describe the problem solving method of teaching.   (3)
f)   The following questions were classified as shown.   (7)

     K -   knowledge
     C -   comprehension
     AN-   analysis
     A -   application
     S -   synthesis
     E -   evaluation

     Match the question with the classification. Write the number corresponding to the
     question and then the letter corresponding to your chosen answer.

     i.   Calculate the area of a triangle with base 8cm and height 4.5cm.
     ii.   Identify one characteristic of a fair examination.
     iii. Draw a diagram showing a strategy you will use to find the total floor area of a two
           story building.
     iv.   Which formula would you use to find the area of a circle?
     v.   Explain the reason for using a ruler to draw a straight line.
     vi.   How does the use of a problem solving strategy compare with the use of drill and
           practice in mathematics teaching?
     vii. Compare the difficulty with which young children learn to subtract and the way they
           to understand time.

     Total   **(30)**

Answer **any two** questions from the following.

Question 2

Supposing you are an inspector and you visit several schools in the Shiselweni region. In addition to your other duties in the schools you choose to observe some mathematics lessons to see how well they teach problem solving. You conclude that teacher A from School A is a developmentalist and teacher B from school B is a behaviourist. If both teachers are rated 'very good'

    a.   Describe the observation you may have made that lead to that conclusion. Your description should indicate as how the lesson was planned for as well as what the teachers and the learners did during the lesson.
         (25)

    b.   Illustrate Gagne's task analysis using any lesson of your choice from the NCC materials.   (10)

Question 3

    a.   Gaming is considered to be an indirect, learner-centred teaching method. Justify this claim and use examples of what happens during such a lesson.   (20)
    b.   Show how you would use discovery to teach a mathematics lesson from a topic of your choice.   (15)

Question 4

The mathematics laboratory method has been said to be useful particularly in the primary school.

    a.   Indicate what you understand by this concept and why is useful for teaching mathematics at the lower grade levels.   (20)
    b. Develop an assignment card that is aimed at the development of place value. (15)

Question 5

    a.   Write **two** multiple choice and **one** problem solving questions, with marking guides, that you might use to assess learners in a topic of your choice. (20)
    b.   Describe assessment and its purpose in mathematics.   (15)