

UNWERSITY OF SWAZILAND
FINAL EXAMINATION PAPER MAY 2012: BED II PRIMARY
COURSE NUMBER: PEC 276
COURSE NAME: CURRICULUM STUDIES: MATHEMATICS
TIME ALLOWED: 3 HOURS

INSTRUCTIONS:

1. THIS PAPER HAS SIX QUESTIONS.
2. YOU WILL ANSWER A TOTAL OF FOUR QUESTIONS
3. ANSWER QUESTION 1 and ANY THREE QUESTIONS FROM QUESTIONS 2, 3, 4, 5 AND 6.
4. EACH QUESTION IS WORTH 25 MARKS
5. ANY PIECE OF MATERIAL WHICH IS NOT FOR MARKING PURPOSES MUST BE CROSSED OUT CLEARLY.

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

Question 1

- a) Give an account of what you understand by each of the following in the context of primary school mathematics. In each case give examples of **two** topics where the method would be appropriate.
 - (i) The question and answer method of teaching and learning [10]
 - (ii) The Discussion method [10]
- b) Indicate how you would use everyday context(s) to teach surface area of a cuboid [5]

Question 2

- a) Explain with examples from the primary school mathematics syllabus Piaget's **three** basic learning processes. [10]
- b) Discuss Dienes' theory of learning mathematics using some of the materials he developed. [15]

Question 3

- a) Describe **two** materials used for teaching the concept of regrouping in addition and subtraction. In each case show how the material is used [10]
- b) Identify the material(s) you would prefer to use and give reasons for your choice of this/these material(s) and not the other(s). [15]

Question 4

- a) Children often have difficulty doing calculations involving time. This could be an indication that they did not grasp the concept of place value in arithmetic. Do the following calculations in base 5. If you make a mistake cancel neatly in pencil so that your initial steps can be read.
 - (i) $123_5 + 432_5$
 - (ii) $112_5 - 42_5$
 - (iii) $43_5 \times 4_5$ [12]
- b) From your experiences in doing (a) suggest some explanations for children's difficulties. How did your knowledge of base 10 interfere in your thinking? How would you help children overcome these difficulties? [13]

Question 5

- a) What does each letter in the sequence, ELPS, the sequence that leads to mathematical abstraction stand for? [4]
- b) Explain how each word in (a) would apply in the learning of cardinal numbers [12]
- c) 'Once you know the addition and multiplication facts of 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 you can do all 4 basic operations on any positive integers.' Write a page to refute or support this statement using examples to provide backing to your arguments. [9]

Question 6

- a) The table below shows a set of Hindu Arabic numerals we use together with their equivalent Roman numerals. Complete the table to write, using Hindu Arabic numerals, an addition number sentence portrayed by each of the highlighted Roman numerals. [19] (Do this part on this page then attach it to your answer booklet)

Hindu Arabic Numerals	Roman Numerals	Addition Number Sentence
1	I	
2	II	
3	III	
4	IV	
5	V	
6	VI	
7	VII	
8	VIII	
9	IX	
10	X	
11	XI	
20	XX	
30	XXX	
40	XL	
50	L	
60	LX	
70	LXX	
80	LXXX	
90	XC	
100	C	

- b) Write Roman numerals for the numbers 400 and 600 given that 500 is D in Roman numeral [4]
 c) Explain the reasoning you used in (b) [2]