UNIVERSITY OF FORT HARE

MODULE CODE: NUM 221E

ADVANCED CERTIFICATE IN FOUNDATION PHASE TEACHING

NOVEMBER EXAMINATION PAPER

YEAR: 2019

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TIME: 3 HOURS

SUBJECT: NUMERACY 2

MARKS: 100

This paper consists of 5 pages including the cover page

Internal Examiner	Internal Moderator	External Examiner
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INSTRUCTIONS

- Answer all the questions
- Number your answers exactly as they are numbered in the question paper.

QUESTION 1 [25 Marks]

1.1. What do you understand by numeracy? (1)

1.2. Why is it important to be numerate? (2)

1.3. *How do you link numeracy to real life situation* (3)

To help learners in Foundation Phase learn and think mathematically, teachers need to understand the notion of sequencing teaching activities (Department of Basic Education, 2009).

How are activities sequenced in Foundation Phase? Mention and discuss each stage. (10)

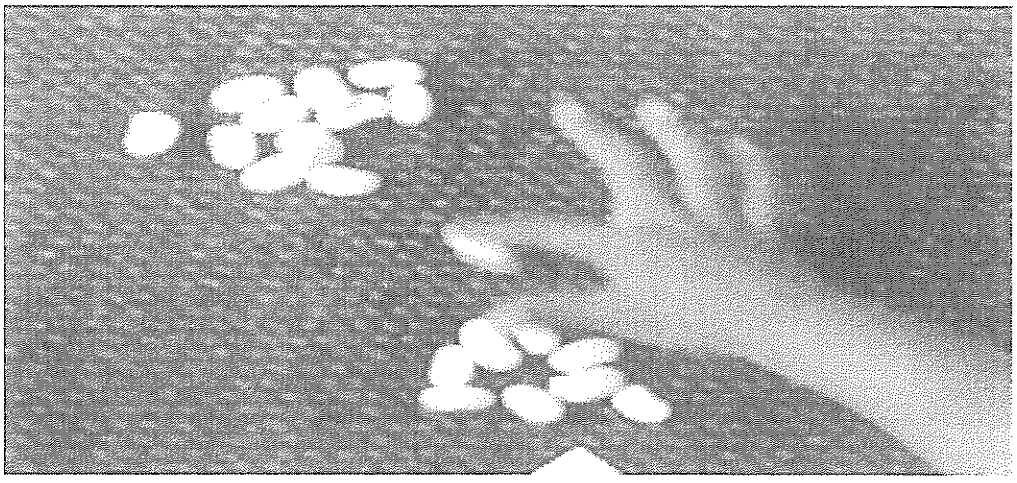
1.4. *Developing numeracy in Foundation Phase, three kinds of knowledge are important and they support one another. Each of these is important in the development of the child in general, and the child's mathematics in particular* (Department of Basic Education, 2009).

1.4.1. Mention and briefly describe each kind of knowledge. (9)

QUESTION 2 [40 Marks]

2.1. The following figure shows a concrete way of adding and subtracting.

Figure 1: Counting out physical objects using white beans



2.1.1 Considering the figure above, briefly explain how three kinds of knowledge support each other. (6)

2.1.2. When learners have mastered this method, you then go to advanced methods like using pyramid, hence the following question:

Give an example of a Pyramid that you would use to reinforce the following number operations at Grade 1 level

a) Addition; and (4)

b) Subtraction. (4)

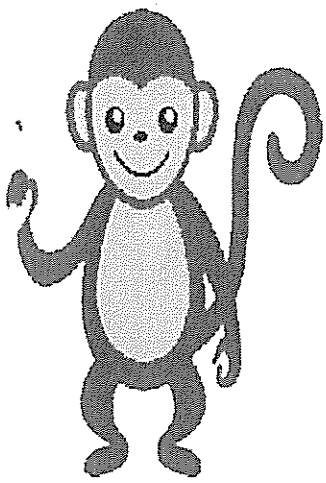
2.2. Look at the table below on the counting and subtraction and addition number ranges that the CAPS document outlines as the **minimum requirements** for the Foundation Phase. Draw a similar table in your exam book and fill in the missing information. (6)

Table 1: Grade progression in counting, subtracting, and adding numbers.

	Counting Number Range	**Addition and subtraction Number Range**	**Know bonds up to**
Grade R	Count at least 10 objects reliably	Verbally solve problems up to 10	None
Grade 1	Estimate and count at least 50 objects everyday reliably	Add and subtract up to 20	?
Grade 2	?	Add and subtract up to ?	?
Grade 3	?	Add and subtract up to 999	?

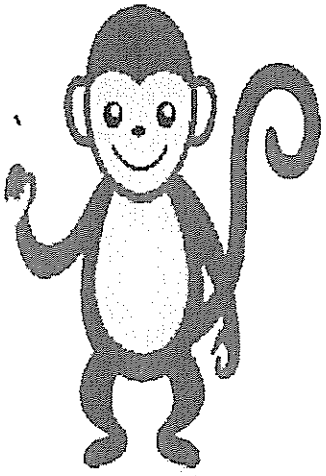
2.3. Look at figure 2 below and answer questions that follow.

Figure 2: Monkey mathematics problem



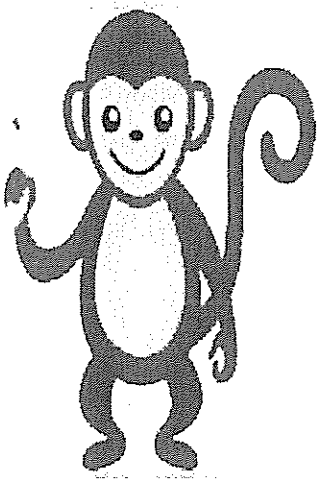
Ref: Wits Maths Circle Problem

Three monkeys, Mandy, Milly and Moses, collected a huge pile of bananas that they were going to share. They put all the bananas together in a big pile and went to sleep. During the night, Mandy woke up hungry. She ate one banana and divided the rest of the bananas into three equal piles. She took one of the piles off into the forest to hide them away for herself.



A little while late Milly woke up hungry. She ate one banana and divided the rest of the bananas into three equal piles. She took one of the piles off into the forest to hide them away for herself.

And just before morning Moses woke up hungry. He ate one banana and divided the rest of the bananas into three equal piles. He took one of the piles off into the forest to hide them away for himself.



When all the monkeys got up in the morning, they were shocked to see only 6 bananas left and only 2 piles. They all denied taking any bananas during the night. Eventually they shared the 6 bananas equally between them and headed off into the forest angry with each other.

2.3.1. How would you expect your learners to answer the following questions about the monkey mathematics problem?

i) How many bananas were in the pile when the monkeys went to bed? Show your working. (9)

ii) Explain **in words** how did you come to the answer in (i). (7)

iii) Did each monkey end up getting an equal number of bananas? Explain your answer. (4)

QUESTION 3 **[35 marks]**

3.1. A Grade 1 teacher wants to teach her children about measurement. For her first lesson, she is planning to explain on the chalkboard (blackboard) and then consolidate it by giving the children a worksheet to do. Provide an explanation of why this is not necessarily the best method of teaching measurement in Grade 1 class. (10)

3.2. Van Hiele discovered 5 levels, in which learners develop Geometric thinking, and only the first three take place in the Foundation phase. List and briefly describe these three levels. (9)

3.3. *Learners in the Foundation Phase need to have extensive opportunities to play/work with concrete apparatus. Hence, each Foundation Phase classroom must have large collections of shapes and objects that children can play/work with* (Department of Basic Education, 2009).

3.3.1. Name 5 types of shapes that you should at least have in your classroom. (10)

3.4. The collection of data in Grades 2 and 3 may involve collection sheets and tally marks. Show how you would expect your learners to represent information that had been collected from the learners in your class of 51 regarding how they come to school, using tally marks. The recorded information reflects that: 20 come by bus, 23 by taxis and 8 walk to school. (6)

TOTAL = [100 MARKS]