

PED124 Introduction to Mathematics Teaching May 2018

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER MAY 2018: BED I PRIMARY

COURSE NUMBER: PED124

COURSE NAME: INTRODUCTION TO MATHEMATICS TEACHING

TIME ALLOWED: 3 HOURS

- INSTRUCTIONS:
1. THIS PAPER HAS **FIVE** QUESTIONS.
 2. ANSWER **QUESTION 1** AND ANY **TWO** OTHER QUESTIONS.
 4. DOCUMENTS REFERRED TO IN SOME OF THE QUESTIONS ARE ATTACHED. IF YOU DO NOT FIND THEM, ASK FOR THEM.
 5. ANY PIECE OF WRITTEN WORK 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 **Compulsory general question**

- a. Learning mathematics requires an understanding of number. What is the source difficulty concerning number? (5)
- b. Mathematics is given a double period (60 minutes) every day in all schools while science is given two double periods two times a week. (10)
 - i. What is the difference in time given to the two subject per term of 12 weeks.
 - ii. Explain this difference in time spent on each subject
- c. Give an account of the development of number from ancient civilization. (8)
- d. Show how you would use the number line to teach (9)
 - a. Addition
 - b. Multiplication
 - c. Subtraction
- e. Describe each level of the hierarchy of numbers. (8)

Question 2

As a teacher of Mathematics posted in a rural school

- a. What challenges would you expect to have that emanate from the remoteness of the school? (10)
- b. Describe the learner characteristics you would expect to find in the school. (10)
- c. Outline a strategy you would use to ensure that meaningful learning of Mathematics takes place in that school. (10)

Question 3

- a. Mathematics involves certain features which contribute to difficulty of learning it. Describe **four** of them, and use your ideas to explain why teaching mathematics differ from teaching other subjects. (12)
- d. Describe how you would approach the mathematics teaching task in order to ensure that such features are addressed. (10)
- e. **Teaching is communicating.** Explain this statement using example(s) of how you communicate in a mathematics lesson. (8)

Question 4

- a. Teaching materials for mathematics may be either commercial or improvised.
- Identify 3 commercial teaching materials and indicate what they are used for. (6)
 - Discuss the use of improvised teaching materials showing it value and problems. (8)
 - Explain why teaching Mathematics particularly require the use of Materials. Give an example of an activity that requires concrete materials showing how and why it is used. (10)
- b. Describe **three** strategies you would use to improvise teaching materials for teaching shape to a Grade 5 class. (6)

Question 5

Learns have universal developmental needs that enable them to learn Mathematics.

- a. Show how the following abilities affect learning mathematics use examples to illustrate your answers. (12)
- Inclusion
 - Reversibility of thought
 - Invariance of number
 - Conserving
- b. Using classification to illustrate your point, describe what is meant by stage 1, stage 2, and stage 3 approaches to a mathematics task. (12)
- c. Outline three types of knowledge you learnt in this course. (6)