UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER MAY 2017:   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 QUESTION1 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 WRITTTEN WORK WHICH IS NOT FOR MARKING PURPOSES MUST BE <u>CROSSED OUT</u> CLEARLY.

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

Question 1   **Compulsory**

Supposing you are engaged in the following debate with your colleague

>   You: I like mathematics, it is interesting
>   Colleague: Are you joking, mathematics is the most difficult subject I ever had to learn
>   You: What is difficult about it?
>   Colleague: It does not even make sense to me ...
>   How: You see, now you are asking me to think

a. Use **five** examples to explain why your colleague might find mathematics difficult subject.   (10)

b. Primary schools in Swaziland sometimes give teachers the responsibility to teach all subjects in a classroom. Use **three** intrinsic and **three** extrinsic reasons for learning mathematics you might use to convince your colleague that teaching/ learning mathematics is necessary.   (12)

c. Compare the demands for teaching mathematics and teaching science.   (8)

d. Explain why mathematics is often given more space in the school time table compared to other subjects.   (10)

Question 2

Teaching mathematics has unique demands that are uncommon to other subjects

a. Write **three** unique features of mathematics that require special attention from teachers.   (10)

b. What special qualities of a good mathematics teacher enable them to deal with the unique demands of the subject?   (10)

c. Use example(s) show how a teacher communicates in a mathematics class at the lower primary school level.   (10)

Question 3

a. Piaget describes abilities which are associated with learning mathematics that children develop at different rates. Using examples in each case describe **three** such abilities and show how they affect learning mathematics. (9)

b. Using seriation to illustrate your point, describe what is meant by stage 1, stage 2, and stage 3 approach to a mathematics task. (12)

c. Outline the **three** type of knowledge suggested by Piaget relating it to the stages of development. (9)

Question 4

a. Give examples of mathematics in **two** different subjects, showing how it is used in those subjects. (10)

b. Mathematics is considered a language of science. Use **three** examples from physics to explain this statement (12)

c. In real life we often find mathematics useful. Identify **two** situations that require the use of mathematics showing its value to society. (8)

Question 5

a. Discuss the history of the development of numbers. (6)

b. Using example(s) show how stage 1, stage 2 and stage 3 learners might approach a task that requiring a "one-to-one correspondence". (9)

c. Use diagrams to illustrate the following: conserving volume, conserving mass. (9)

d. Outline the hierarchy of numbers. (6)