UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER December 2017: BED I PRIMARY

COURSE NUMBER: PED121

COURSE NAME: SKILLS FOR TEACHING SCIENCE PRACTICALS

TIME ALLOWED: 3 HOURS

INSTRUCTIONS:

1. THIS PAPER HAS **SIX** QUESTIONS.
2. QUESTION 1 IS COMPULSORY. YOU MAY THEN CHOOSE **ANY THREE** (3) QUESTIONS FROM SECTION B (QUESTIONS 2, 3, 4, 5, AND 6).
3. EACH QUESTION IS WORTH A MAXIMUM OF 25 MARKS.
4. DOCUMENTS REFERRED TO IN SOME OF THE QUESTIONS ARE ATTACHED. IF YOU CAN'T 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

Answer **question 1** and any **three** other questions from this paper.

Question 1 This question is compulsory.

a. Study the following activity in *extract 1*and answer the questions that follow

EXTRACT 1

Grade 6 **Science**

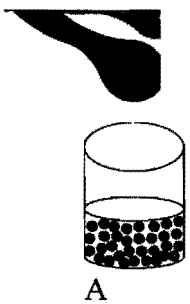
Activity 2 **XXXXX**

Sibongile accidentally dropped a paper bag of sugar into a bowl of water and it slowly disappeared. She was frantic because she feared that she would be punished. She talked to her friend Sandile about what she should do. Sandile suggested that they should try and get the sugar back. They both wondered how.

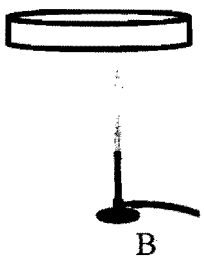
What could they do?

They did the experiment below. Join them by doing the experiment.
What will you need?
What will you do?
What do you expect to find?

Now set up the experiment



A



B

Write down what you see every minute
Where has the water gone?

i. Identify **four** scientific processes involved. (4)
ii. Suggest how the activity could be used to encourage the following scientific attitudes (i) *accuracy* and (ii) *open mindedness*. (6)
iii. Identify **one** thing that makes the arrangements shown in B unsafe. (1)

b. **Science knowledge is valued highly in society**. Discuss this statement. (5)

c. Good teaching requires careful planning. Justify this statement. (9)

Total **25 Marks**

Question 2

Study this fun experiment made for grade four level children.

Will the ice melt and overflow?

Do you think an ice cube sitting on top of a glass full of water would melt and increase the volume of water to overflow? Carry out the following experiment to find out.

You will need

- a clear glass
- warm water
- an ice cube

Instructions:

1. Fill the glass to the top with warm water
2. Gently place the ice cube on top of the water. Make sure you don't bump it or spill the water with your hands.
3. What do you think will happen?
4. Watch the water level carefully as the ice melt, what happens?
5. Write down what you see happening in your exercise book.
6. Explain what happened in your experiment.

Note: even though ice block melted, the water did not overflow as expected.

a. Describe the scientific processes encouraged by 3, 4 and 5 justifying your choice. (9)

b. What is the value of including step 6? (6)

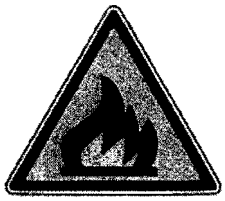
c. Describe how you would assess this activity justifying you proposed strategy/instrument. (10)

Total **25 Marks**

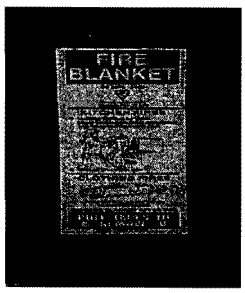
Question 3

a) Safety in the laboratory is a requirement. Under what circumstances do you use the following items of safety. You should indicate their description, position and purpose. (12)

i.



ii.



b) Explain the use of laboratory safety rules giving examples of **five** rules. (10)

c) How does safety differ from treatment? (3)

Total **25 Marks**

Question 4

a. Explain the use of protective clothing in the laboratory. Illustrate your answer by giving **five** examples of protective clothing. (15)

b. Describe the setup of a demonstration activity involving mixing caustic liquids while ensuring safety. Indicate the apparatus/equipment you would use for this experiment. (10)

Question 5

a) Describe **four** classes of fires including sources and method of dealing with each. (12)

b) Supposing one of your grade V learners catches fire while using a gas for a cylinder source. (13)

i. Outline the steps you would take to deal with the situation.

ii. Identify one method of putting out fire which would not work in the situation described and explain why.

Total **25 Marks**

Question 6

a. Discuss the use of *observation* as a method of assessing practical work showing its merits and demerits. (10)

b. Study Extract 1 above and, design **two** different assessment **four** item instruments that would be suitable for the activity. Explain how the instruments would work (7)

c. Discuss the approach used in assessment in the national examination showing it merits and demerits. (8)

Total **25 Marks**