

UNIVERSITY OF SWAZILAND

FACULTY OF EDUCATION

FINAL EXAMINATION PAPER December 2015: BED II PRIMARY

COURSE NUMBER: PEC 277

COURSE NAME: CURRICULUM STUDIES: SCIENCE

TIME ALLOWED: 3 HOURS

- INSTRUCTIONS:
1. THIS PAPER HAS SIX QUESTIONS. QUESTION 1 IS COMPULSORY.
 2. ANSWER QUESTION 1 AND ANY **THREE** OTHER QUESTIONS.
 3. YOU WILL ANSWER A TOTAL OF **FOUR** QUESTIONS. EACH QUESTION IS WORTH 25 MARKS.
 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

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

Question 1 This question is compulsory.

- a. Distinguish between the following pairs of concepts:
 - i. Triangulation and Learning styles
 - ii. Hypothesising and inferring
 - iii. Scientific theories and scientific principles. (12)
- b. Write the three Hirst's postulates (6)
- c. Define problem solving (4)
- d. Label three of the following as 'objective, 'key point' or, 'attainment target': (3)
 - i. Salt (Sodium Chloride) dissolves in water
 - ii. Temperature affect how much of salt dissolves in water
 - iii. Design an Investigation for effective water purification
 - iv. Read a chart showing the water cycle
 - v. Classify substance according to whether or not they dissolve in water

Total

[25 Marks]

Question 2

Study the activity in appendix A (see attachment)

- a) Identify a concept that is taught through the activity.
- b) Write **three** scientific process skills inherent in the activity
- c) Describe attainment targets and show how they differ from objectives (10)

Total

[25 Marks]

Question 3

Using the same activity in Appendix A

- a. Write **three** objectives: one from each of the three domains of learning. Objective should be order. (9)
- b. Write **three** key points of the of the activity (9)
- c. Write the value of writing intended outcomes in a science lesson (7)

Total

[25 Marks]

Question 4

- a. Explain the learning process from the point of the ‘Zone of Proximal Development’. Give details of how this view differs from Piaget’s views of learning. (15)
- b. Describe the following principles that affect the choice of teaching method:
- i. Triangulation
 - ii. Prime time (10)

Total

[25 Marks]

Question 5

Discuss, how you would use the following teaching methods to teach ‘**Changes can be physical or chemical**’: (25)

- i. A lecture
- ii. Discovery
- iii. Demonstration
- iv. Laboratory experimenting
- v. Questioning.

Total

25 Marks

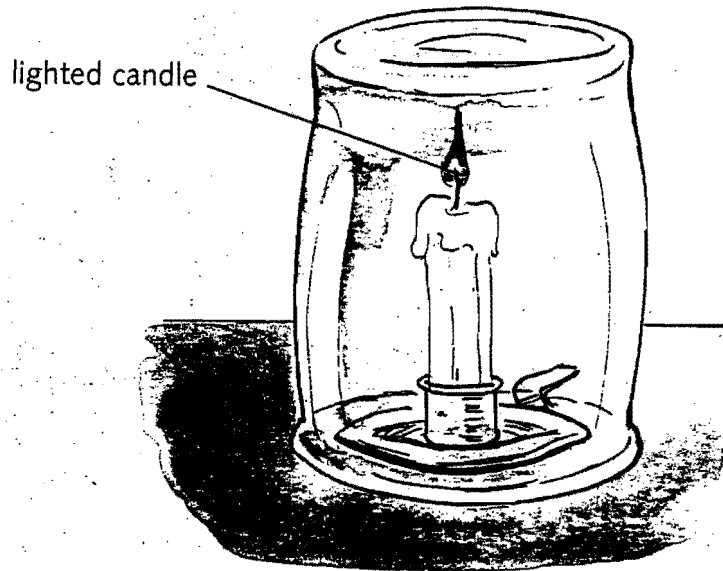
Question 6

- a) Write a lesson plan for a contextualised lesson on the topic “Habitats” (19)
- b) Write **two** questions you would use to assess learning in this lesson. (6)

Total

25 Marks

Work in small groups to do this experiment. Your teacher will help you to set up a candle on a small dish and to light it. Then carefully lower the glass jar over the candle so that it covers it, as shown in the drawing.



Transparent glass jar does not let in any air

1. Remember what you learned in the previous section about air. What gases do you think are in the jar?
2. Observe the candle for a few minutes. What happens to the candle flame?
3. Why do you think this happens?

You will have observed that the candle flame went out after some time. This is because one of the gases in the jar was oxygen. All the oxygen in the jar was used up when the candle burned.

Oxygen is necessary for a candle to burn. Oxygen is also important for humans and animals to breathe. Look at the picture below of a mouse in a sealed container.



1. How do you think being closed up in the container has affected the mouse?
2. Do you think that it is all right to do this to an animal?