

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER May 2007: BED II PRIMARY

COURSE NUMBER: PEC 277

COURSE NAME: CURRICULUM STUDIES: SCIENCE

TIME ALLOWED: 3 HOURS

- INSTRUCTIONS:
1. THIS PAPER HAS SIX QUESTIONS.
 2. ANSWER QUESTION 1 (COMPULSORY). CHOOSE ANY THREE (3) QUESTIONS FROM QUESTIONS 2, 3, 4, 5, AND 6.
 3. DOCUMENTS REFERRED TO IN SOME OF THE QUESTIONS ARE ATTACHED. IF YOU CAN'T FIND THEM ASK FOR THEM.
 4. ANY PIECE OF MATERIAL WHICH IS NOT FOR MARKING PURPOSES MUST BE CROSSED OUT CLEARLY.

SPECIAL REQUIREMENTS: NCC SCIENCE BOOK

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

Answer question 1. Choose any three questions from 2, 3, 4, 5 and 6. Use the answer book provided for all answers

Question 1

Write brief notes on five of the following

- a. accommodation and assimilation
- b. Herst's postulate
- c. the principle of triangulation
- d. selecting teaching methods
- e. products of science
- f. purposes of assessments
- g. who is who in science education in Swaziland?

5 marks each (25)

Question 2

- a) Consider the lessons presented in appendix A, see attached copy of exemplary lessons.
 - i. Suggest a lesson topic for lesson C and indicate the teaching approach used. (3)
 - ii. Write three objectives for lesson C. Objectives should be higher than recall and they should cover at least two domains. (6)
 - iii. Write three key points you would aim to cover using lesson C (6)
- b) Explain the value of specifying learning outcome during lesson preparation (10)

Question 3

- a. Compare the approaches used by the three teachers in appendix A. Indicate, with reasons, which of them you consider to be context based and why? (10)
- b. Prepare a lesson plan to show how you would develop one of the lessons to the end. Your plan should show what the teacher would do and what learners would do and the scientific processes involved. (15)

Question 4

'I can identify a good teacher by looking at the performance of learners in her/his class'

- a. Discuss this statement indicating its deficiency and adequacy in expressing the purpose of assessing. (10)
- b. Write three assessment items that you would use to assess learning of a lesson of your choice. You should have one multiple choice item, one structured and one open ended essay type question. Include a marking guide for these questions. (15)

Question 5

Supposing you are posted to a new school and are given the responsibility to organise science teaching as a lead teacher:

- a. Describe your role as a head of department in ensuring successful teaching. (8)
- b. Supposing your school receives a grant to build a science laboratory and you play a major role in planning this project. What would you do to ensure that an appropriate structure is built? (15)

Question 6

Discuss the contribution of learning theories of Piaget and Vygotsky to the teaching of science. Include a description of these theories and what they mean in terms of teaching. (25)

Part II Focus on the teaching

12. The following are examples of what teacher do in science classes. Each of them are only sections of a lesson. Study them carefully and decide what approach the teacher is using and answer the questions which follow.

Lesson A

Miss Ginindza is teaching her Grade VI class about air pressure. She told her students to prepare for this lesson by reading from their activity books. After describing air pressure, she let the students carry out practical as follows:

Lesson instructions in the activity book:

You will need two similar tin cans with tight lids, a nail, a hammer and some water in a dish.

1. Make a number of holes in the tins near the bottom with the nail and hammer.
2. Place the tins in the dish of water, then fill them with water.
3. Before the water runs out, close the tins tightly with the lids.
4. Hold both cans up. What happens?
5. Remove the lid from one can, then hold them both up again.
6. What happens now? Why is there a difference?

Miss Ginindza insists that students follow the instructions carefully and write answers in their workbooks. She also told them that they would get notes on air pressure.

Lesson B

A grade VI class at Maqondza primary school were doing science. Mrs Gama, their teacher, used the following story for the lesson:

Bongi: I just put sugar in this can of water and it disappeared. Where has it gone do you know?

Vusi: I don't know. Look! Some fell on the fire, it is becoming black and it smells.

Bongi: Where has the rest of the sugar gone? I want my sugar back.

As the lesson progresses the class discuss the argument between Bongi and Vusi.

Teacher: Can Bongi get her sugar back?

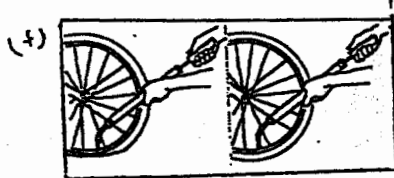
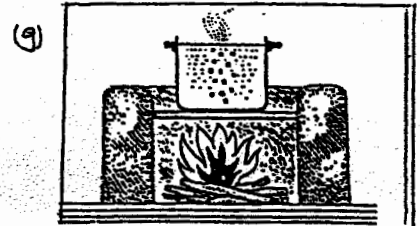
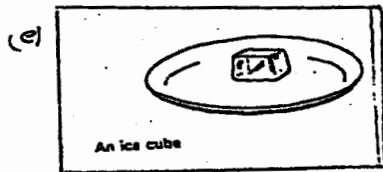
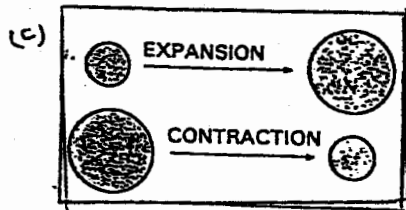
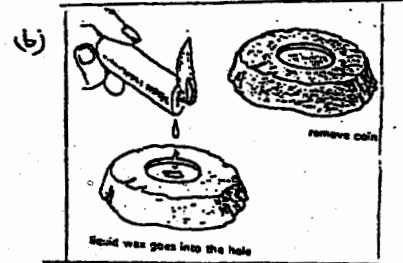
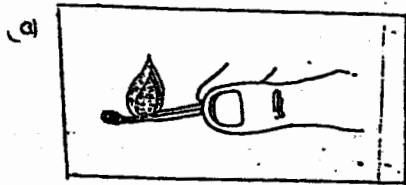
Class: Yes No, (together).

Tammy: No teacher, she can get some of the sugar back, not the one that burnt.

T: correct Tammy. Now tell me why can she get some of the sugar back and not all. Use science words which you learnt in this class to explain why the sugar disappeared and how Bongi can get her sugar back.

Lesson C

In Mr Dube's class they were doing a lesson on changes of substances. Mr Dube asked the class to bring examples from home which showed change in substances. The following pictures show examples of ideas the class brought for the lesson:



Appendix A

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