

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER MAY 2013: BED III PRIMARY

COURSE NUMBER: PEC 377

COURSE NAME: CURRICULUM STUDIES: SCIENCE

TIME ALLOWED: 3 HOURS

- INSTRUCTIONS:
1. THIS PAPER HAS SIX QUESTIONS.
 2. ANSWER ANY **THREE** QUESTIONS.
 3. 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 any **four** questions from this paper.

Question 1

- a) Outline the principles involved in the selection of teaching resources for science. (10)
- b) Describe the significance of (i) human and (i) structural resources in teaching science (10)
- c) The environment is said to be a universal teaching resource. Discuss (5)

Total

25 Marks

Question 2

Read the following newspaper article on a real life issue and give responses to the following question

LESS THAN TWO WEEKS TO EARTH HOUR: what will you be doing Mbabane – with less than two weeks to go before the main Earth Hour event, more are signing up for this environmental campaign. ... Universities and schools can support Earth Hour by switching off the lights in in their Campuses and school grounds and encouraging students to also participate. As educators, universities are well positioned to be a driving force of actions beyond the Hour by leading, educating and encouraging students and local community members to make on-going changes to reduce their impact on the planet. (The Times of Swaziland, 13th March, 2013).

- a) Discuss how you would use this article for teaching science showing how science, technology and society issues feature in your lesson on energy saving. (10)
- b) Describe, with justification, what approach(es) to STS you would use to teach the lesson(s) in a) above. (10)

Total

25 Marks

Question 3

Concept development and misconceptions in science pose challenges for teachers of science learning.

- a. describe how learners develop concepts and misconceptions in science. (15)
- b. Identify two misconceptions in science and suggest how you would deal with them.

Use any misconception from biology, chemistry or physics. (10)

Total 25 Marks

Question 4

- a. Study the examination question paper in appendix A and
i. Develop an assessment grid for the paper.
ii. Write a marking guide for question 7. (15)
- b. Discuss the purpose of assessment in education. (10)

Total 25 Marks

Question 5

- a. Outline the sources of language problems in science showing how they affect learning (15)
- b. Describe '*communication in science teaching and learning*' indicating how language can form a barrier to communication. (10)

Total 25 Marks

Question 6

- a. Suggest the motivational strategies you would employ in a new school that is situated in remote area which is close to a mining area from each of the following views:
i. A behaviourist view
ii. Constructivist view (20)
- b. Outline Maslow's hierarchy of needs (5)

APPENDIX A



EXAMINATIONS COUNCIL OF SWAZILAND SWAZILAND PRIMARY CERTIFICATE EXAMINATION

CANDIDATE
NAME

CENTRE
NUMBER

CANDIDATE
NUMBER

Science
Paper 2

513/02
October/November 2010
2 hours 30 minutes

READ THESE INSTRUCTIONS FIRST

1. Write your name, centre number and candidate number on the spaces provided at the top of the page.
2. Write your answers using a dark blue or black ink pen in the spaces provided on the question paper. You may use a soft pencil for any diagrams, graphs and tables.
3. This paper consists of two sections; (Section A and B).
Answer **all** questions in Section A.
Choose and answer **one** question in Section B.
4. Tick (✓) on the grid the questions you selected in section B.
5. The number of marks is given in brackets [] at the end of each question or part question.

Question	Tick	Examiner's Use
A1	✓	
A2	✓	
A3	✓	
A4	✓	
A5	✓	
B6		
B7		
TOTAL		

This document consists of **15** printed pages and **1** blank page.

SECTION B

Answer **one** question of your choice in this section.

- 6 (a) Musa wants to find the length of his father's curved iron bar shown below.



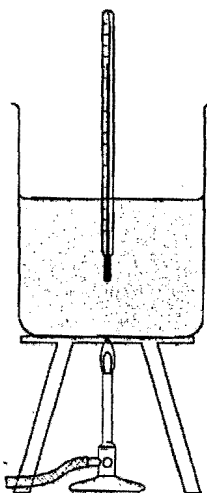
- (i) Describe how he can measure the length of the curved iron bar using a rope and a metre ruler.

.....[3]

- (ii) State the units for the length measurement.

.....[1]

(b) The diagram below shows apparatus Jane used to boil a clear liquid. The liquid boiled at 98°C.



(i) Name the liquid that might be in the container.
[1]

(ii) Name the instrument Jane used to measure the boiling point of the clear liquid.
[1]

(iii) Explain what would happen if Jane continues to heat the liquid for a longer time.
[2]

(c) Jane put her clear liquid in the freezer at school.

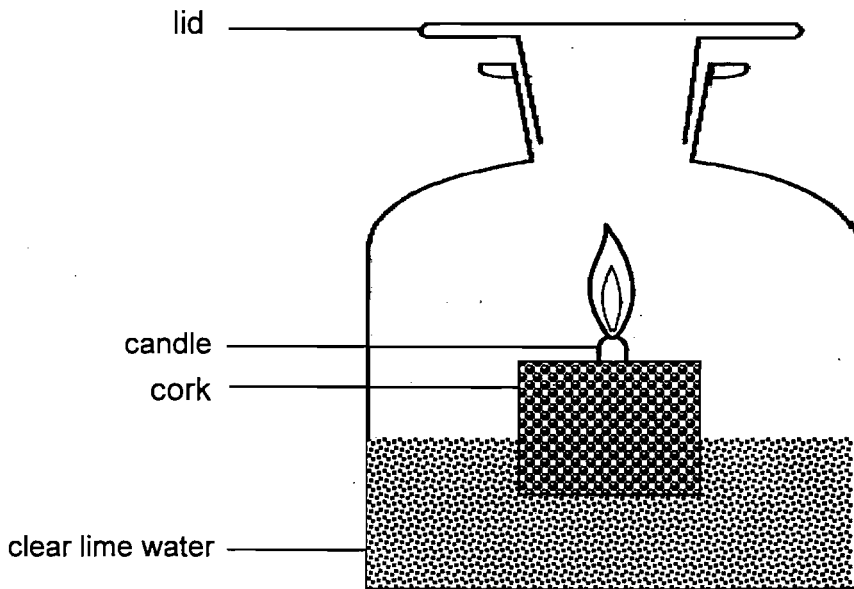
(i) State what would happen to the liquid while in the freezer.
 [1]

(ii) State the temperature of the liquid Jane is likely to record after 15 minutes.
[1]

[Total: 10]

7 (a) Pupils from a Grade 6 class were learning about gases found in the atmosphere.

The diagram below shows the apparatus used by the pupils in class.



State the name of the gas which was in the jar that helped the candle to burn.

.....[1]

(b) After a few minutes the candle went off.

(i) Explain what caused the candle light to go off.

.....
[2]

(ii) Explain what happened to the lime water in the jar after the candle light went off.

.....[1]

(iii) Give a reason why the jar was covered with a sheet of glass smeared with vaseline.

.....[1]

- (c) Sizwe observed all the colours of light shown by the rainbow in the sky after some heavy rain.

Sizwe and his friends took a white cardboard, torch, mirror, and a bowl of water to make their own light.

Explain how they used the above materials to make the colours of light.

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.....

.....

.....

[5]

[Total:10]