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THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
DIPLOMA IN EDUCATION EXAMINATION

731 **PHYSICS TEACHING METHODS**

Time: 3 Hours ***Friday 09 May 2003 a.m.***

Instructions

1. This paper consists of sections A, B and C.
2. Answer **ALL** questions in sections A and B and **TWO (2)** questions from section C.
3. Cellular phones are **not** allowed in the examination room.
4. Write your Examination Number on every page of your answer booklet(s).

This paper consists of 3 printed pages.

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SECTION A (36 marks)

Answer ALL questions in this section.

1. Students were presented with bar magnets and different kinds of materials, and were asked to identify their magnetic properties after examining through activities and experimentation. Explain briefly the kind of teaching approach that had been used in this lesson.
2. What is meant by "physics laboratory management"?
3. Explain briefly the procedure of helping a student who has suffered an electric shock.
4. Explain briefly the features of the physics learner's text book under knowledge and skills criteria.
5. Show the differences between methods and techniques in the teaching and learning process?
6. Instructional objectives are among the major criteria for selecting a teaching method. Explain.
7. State and explain four physics laboratory safety rules to the students.
8. What is meant by the term "physics curriculum"?
9. Earthing is very important in physics laboratory electrical devices and appliances. Show how you would lead your students in the understanding of the importance and application of earthing.

SECTION B (40 marks)

Answer ALL questions in this section.

10. Prepare a lesson plan of 80 minutes to form II students on the topic "the determination of the e.m.f of a cell" using a potentiometer.
11. Explain briefly how you would help the victims of the following accidents in a laboratory:
    (a) Solids or liquids in the mouth but not swallowed
    (b) Burns caused by hot objects
    (c) Acids on skin
    (d) Cuts
    (e) Glass in the eye.

SECTION C (24 marks)

Answer TWO (2) questions from this section.

12. Write down a marking scheme for the following questions. The total mark for questions (a) and (b) should be 10.
    (a) Define the following terms:
        (i) Acceleration
        (ii) Velocity
        (iii) Scalar quantity
        (iv) Vector quantity.

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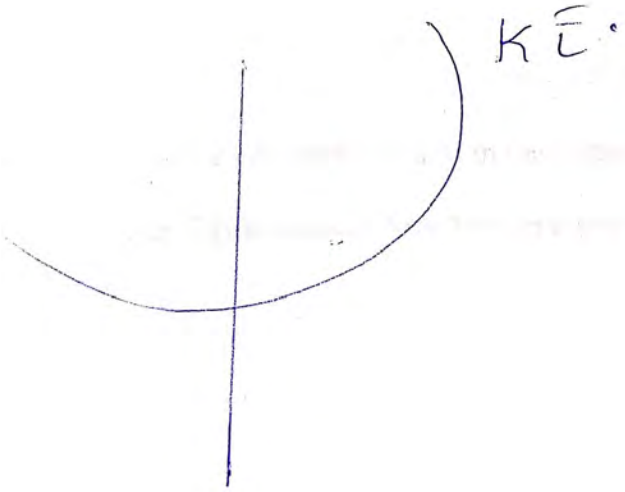
(b) A motor car is uniformly retarded and brought to rest from a speed of 108 km/h in 15 seconds. Find its acceleration.

13. Suppose you are appointed a head of physics department in a new school, which performs poorly in physics examinations. Explain how you would alleviate the problem.

14. Discuss the procedure that you would follow in verifying Hooke's law to your students (use spiral spring).

15. By considering motion of a simple pendulum, write short notes on energy conservation as the bob moves from one point to another and back. A drawing is necessary.



$\frac{1}{15 \times 60 \times 60}$ $\quad$ 90×60

5400

$\frac{\cancel{108}\ \cancel{504}\ \cancel{252}\ 126}{\cancel{5400}\ 2700\ 1350\ 675}$

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