KITALA MIXED DAY SECONDARY SCHOOL

FORM THREE PHYSICS CAT 1 TERM ONE 2016.

NAME…………………………………ADM NO……………TARGET……

1. State any two ways of increasing the size of an image formed by a fixed pinhole camera. (2marks)

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2. State one advantages of an alkaline battery over a lead acid battery. (l mark)

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3. A negatively charged rod is brought near the cap of a lightly charged electroscope. The

Leaf divergence first reduces but as the rod comes nearer, it diverges more.

i) State the charge of the electroscope (1 mark)

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ii) Explain the behaviour of the leaf above. (1 mark)

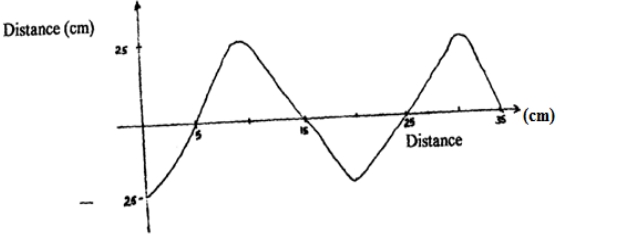
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4. A current 12 A flows through a circuit for 2.5 minutes. How much charge passes through the circuit? (2marks)

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5.The diagram below shows part of a wave form. The numbers on the diagram show scales in centimetres. The speed of the wave is 16ms-1



From the graph of the wave shown, determine;   
a) The wavelength (1mark) …………………………………………………………………………………….………………………………………………………………………………………………………b) The frequency (2mks)

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6. a)

i) Distinguish between longitudinal and transverse waves. (1mark)

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ii) State one distinction between the way sound waves and electromagnetic waves are   
transmitted. (1 mark)

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b) A mine worker stands between two vertical cliffs 400m from the nearest cliff. The cliffs are X m apart, every time he strikes the rock once, he hears two echoes, the first one in *2.5s* while the second follows 2s later. From this information calculate:   
 i) the speed of sound in air. (2mark)

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 ii) The value of X. (3marks)

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7. State two factors that affect surface tension (2mks)

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8. The total weight of a car with passengers is 30,000N. The area of contact of each of the four tyres

With the ground is 0.025m2. Determine the minimum car tyre pressure (3mks)

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9. A faulty thermometer reads 20C when dipped in ice a 00C and 950C when dipped in steam at

1000C. what would this thermometer red if placed in water at room temperature of 180C?

(3 marks)

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10.Xcm3 of substance A which has density 800 kg/m3 is mixed with 1000cm3 of water with a

density of 1000kg/m3.  The density of the mixture is 960kg/m3. Determine the value of X.

(3 marks)

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11. State two factors that affects the speed of sound in gases (2mks)

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12. Light of wavelength 6.7 x 10-7m has a frequency of 4.48 x 1014 HZ. Calculate its speed (3mks)

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13. State two uses of electroscope (2mks)

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14. Given a bar magnet, a steel bar and a string describe a simple experiment to distinguish between the magnet and the steel bar. (4mks)

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15. A uniform metre rule pivoted at its 15cm mark is balanced by a 200 g mass suspended at the 5 cm mark. Determine the weight of the metre rule. (3mks)

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16. State three assumptions made when determining the diameter of an oil molecule in the oil drop experiment (3mks)

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17. Two samples of bromine vapour are allowed to diffuse separately under different conditions. One in a vacuum and the other in air. State with reasons the conditions in which bromine will diffuse faster (2mks)

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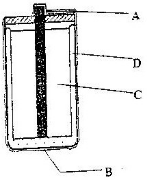
18. Explain why two thin blankets are warmer a single thick one. (2mks)

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19. Fig 7 shows the features of a dry cell (Luclache’). Use the information in the

Figure to answer question 9 and 10

Fig 7

a) State the polarities of the parts labelled A and B. (1mk)

A……………..

B……………..

b) Name the chemical substance in the parts labelled C and D (2mks)