

GATITU SECONDARY SCHOOL, P.O. BOX 327 – 01030, GATUNDU.
FORM 2 PHYSICS END OF TERM 3 EXAMINATION. 2014.

1. Draw a well labeled diagram of a simple d. c electric motor.

(4mks

b) State and explain 4 ways in which the force on the coil ^{above} and hence the speed can be increases. (4mks

2a) State Hooke's Law

(1mk

b) A spring stretches by 2cm when supporting a mass of 600g. Find the spring constant.)2mks

c) The following readings were obtained from an experiment to verify Hooke's law using a spring.

Mass(g)	0	25	50	75	100	125	150
Spring reading cm	10	11.5	12.5	13.5	14.5	15.5	16.0
Force							
Extension							

For each reading calculate:

i) The value of force applied (2mks)

ii) The extension in mm (2mks)

d) Plot a graph of extension against force. (5mks)

e) From the graph determine:

i) Elastic limit (2mks)

ii) Spring constant (3mks)

iii) The extension when a force of 0.3N is applied.

(2mks)

3a) Define the term wave

(1mk)

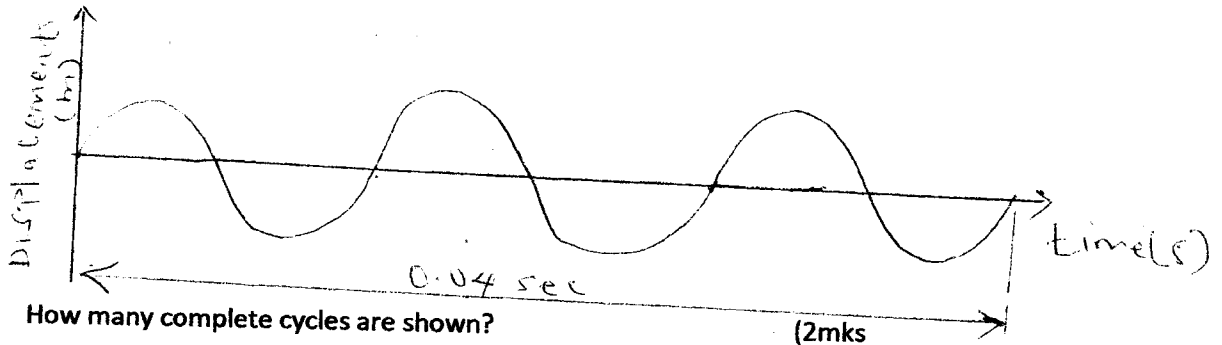
b) Define (i) amplitude

(3mks)

(ii) Frequency

(iii) Period

4. The diagram below shows a displacement time graph for a wave.



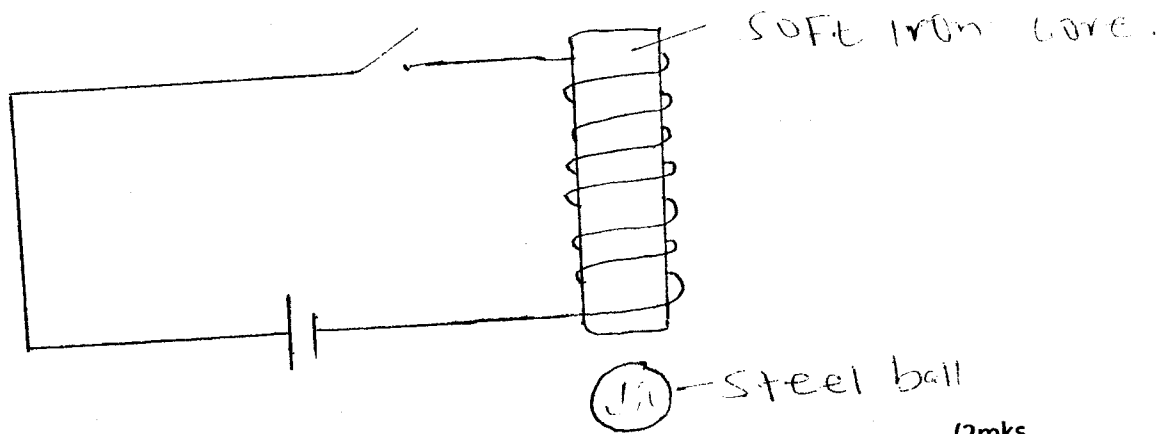
b) Calculate the frequency of the wave

(3mks)

c) Given that the speed of the wave is 200m/s. Calculate the wave length.

(3mks)

5. The diagram below shows an electromagnet.

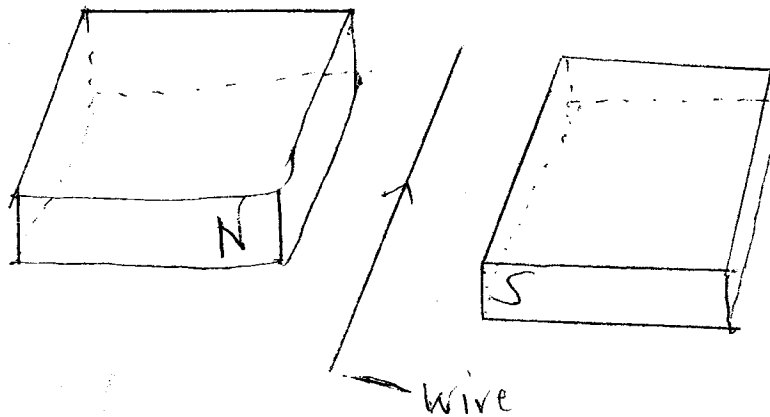


a) Explain why iron is a better material than steel to use for the core.

(2mks)

- b) State two ways in which the electromagnet can be made more powerful. (2mks)

6. The diagram below shows a wire carrying current placed between two magnets. Indicate with an arrow the direction of force on the wire. (2mks)



7. A concave mirror of focal length 10cm forms a virtual image 5cm high. Using an accurate scale diagram determines:

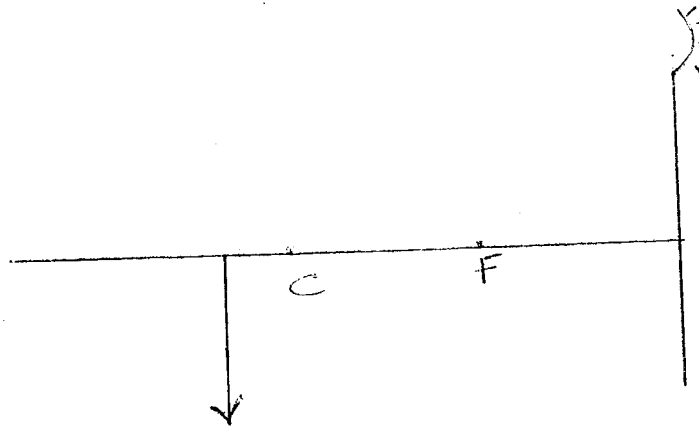
- a) The image position (2mks)
b) Height of the object (2mks)
c) Magnification (2mks)

8. Explain why convex mirrors are suitable for a driving mirror.

(2mks)

9. Complete the ray diagram to show the position of the object.

(3mks)



10. State the difference between a real and a virtual image.

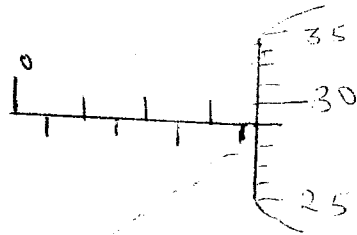
(2mks)

11. A metre rule is pivoted at its Centre. A glass block is hung from one end and the rule is balanced horizontally by hanging masses of 100g and 50g at 60cm and 80cm marks respectively. Calculate the mass of the glass block.

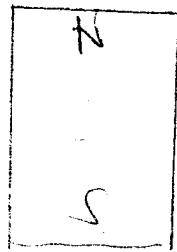
(4mks)

12. Write the reading of the following device.

(2mks)



13. Draw the magnetic field pattern around a bar magnet in earths magnetic field. (2mks)



14. The diagram below shows sounds waves passing through air.

