



LSF KNOWLEDGEBASE SERIES

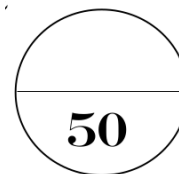
Kenya Certificate of Secondary Education

FORM TWO TOPICAL CHECK 1

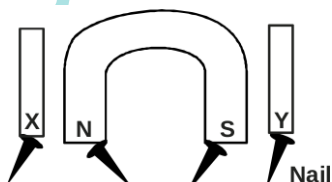
PHYSICS

Time: 1 Hr 30 min

MAGNETISM



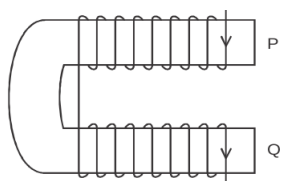
1. When storing a pair of bar magnets, it is advisable to put a keeper at each end.
 - a) Draw a diagram in the space below to show the above arrangement and label the poles of each magnet. (2 marks)
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 - b) Explain briefly how the above arrangement can minimize the loss of magnetism in the bar magnets. (2 marks)
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2. Why is repulsion the surest way of testing for polarity of a magnet? (1 mark)
3. A ferromagnetic material is being magnetised by single stroking method. On the axes provided, sketch a graph to show how the strength of the magnet being created varies with number of strokes. (2 marks)
4. The figure below shows a horse-shoed magnet whose poles are labelled and two other magnets near it. Iron nails are attracted to the lower ends of the magnets as shown.



Identify poles marked X and Y.

(1 mark)

5. The figure below shows a diagram of a current -carrying wire wound on a U-shaped soft iron.



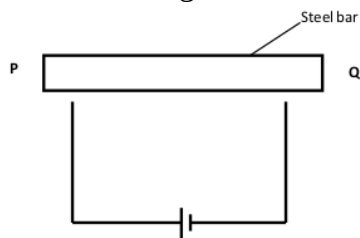
Draw the magnetic field pattern around P and Q.

(2 marks)

6. An unmagnetised steel rod is clamped facing north-south direction and then hammered repeatedly for sometime. When tested, it is found to be magnetised. Explain this observation. (2 marks)

7. State the law of magnetism. (1 mark)

8. Figure below shows a steel bar to be magnetized.



Complete the circuit such that both poles P and Q acquire opposite polarity (North- south respectively). Show the direction the direction of the flow of current. (2 marks)

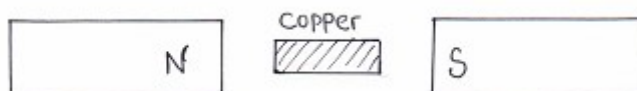
9. The figure below shows a bar magnet. Point A and B are in front of the magnet. (2 marks)



On the axis provided, sketch a graph showing how the magnetic field strength changes from A to B.

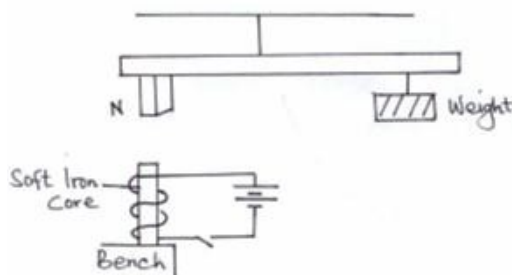


10. Figure below shows a block of copper placed between two poles of a magnet.



Sketch the magnetic field between the poles. (2 marks)

11. Figure below shows a metre rule suspended by a thread such that it is in equilibrium balanced by a permanent magnet attached to the metre rule and some weight.



If the soft iron is fixed to the bench, state and explain the effect on the metre when the switch is closed (2 marks)

12. One method of producing a weak magnet is to hold a steel rod in the North -South direction and then hammer it continuously for some time. Using domain theory of magnetism explain how this method works. (2 marks)

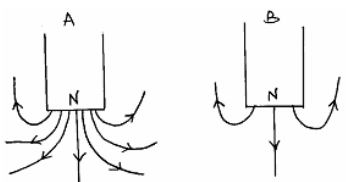
13. An iron ring is placed between two magnets as shown in figure below.



(a) Sketch the magnetic field pattern between the poles and mark the neutral point, X on the diagram. (2 marks)

(b) State one application of the concept tested above. (1 mark)

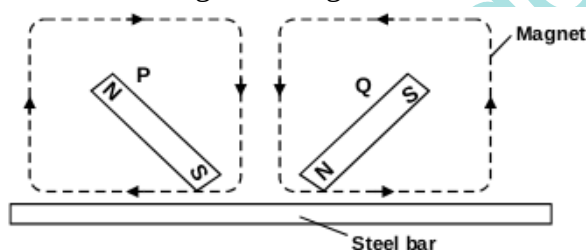
14. Two magnets A and B in figure below were brought from a point high above a table towards a steel pin.



State with a reason which magnet will attract the pin at a bigger height above the table. (2 marks)

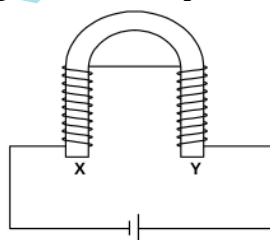
15. Explain In terms of domain theory what happens when a bar magnet is placed in a solenoid in which an alternating current flows. (2 marks)

16. The figure below shows two magnets being used to strike a steel bar.



Identify the method of making magnets represented by the diagram. (1 mark)

17. The figure shows an electromagnet. State the polarities at X and Y.

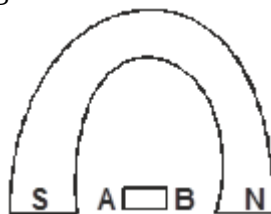


18. Use domain theory to differentiate between magnetic and non-magnetic materials. (2 marks)

19. You are given three bars. One is magnetized with opposite poles at its ends. Another is magnetized with consequent poles. The third is not magnetized. Describe an experiment which you would perform to identify each. (3 marks)

20. The temperature increase weakens or destroys the magnetism of a magnet. (1 mark)

21. A soft iron bar AB is placed in a magnetic field of a horse shoe magnet as shown below.



What are the polarities of A and B.

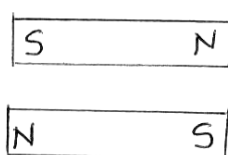
(2 marks)

22. Give a reason why attraction in magnetism is not regarded as a reliable method of testing for polarity.

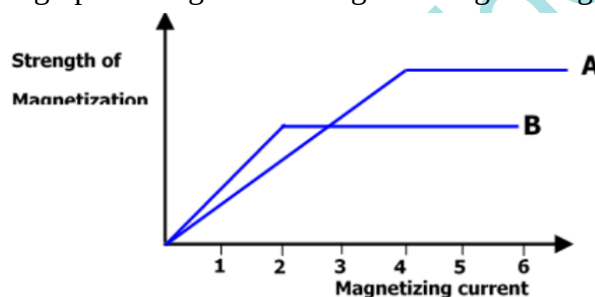
(1 mark)

23. Figure below shows two parallel magnets with unlike poles adjacent to each other. Sketch the magnetic field pattern around the magnets.

(2 marks)



24. Figure below shows a graph of magnetisation against magnetizing current for two materials A and B.



a) State with a reason, the material which is more suitable for use in a transformer to concentrate the magnetic fields.

(2 marks)

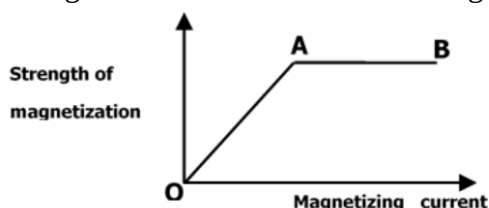
b) Determine the current required to obtain saturation for the material which is suitable for making a permanent magnet.

(1 mark)

25. State TWO factors that affect the strength of an electromagnet.

(2 marks)

26. In an experiment to magnetize a certain substance using a current, the graph below was obtained



Explain with respect to the domain theory what is happening between.

(i) O – A

(1 mark)

(ii) A – B

(1 mark)

27. What is meant by self-demagnetization.

(1 mark)