

CLASS: IX

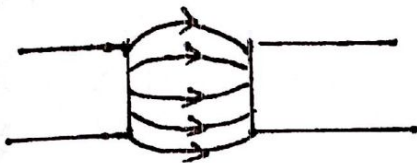
PHYSICS

MARKS: 80  
TIME: 2 HRS

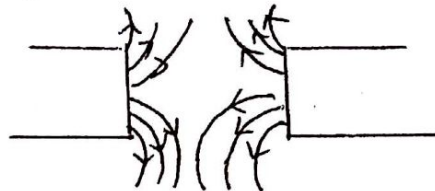
SECTION A (40 MARKS)

QUESTION 1

- a. What do you understand by the term neutral point?  
What is the magnitude of magnetic field at neutral point? (2)
- b. A small magnet is suspended by a silk thread from a rigid support such that the magnet can freely swing
- How will the magnet rest?
  - Draw a diagram to show its orientation (2)
- c. Identify the poles of magnet in the diagrams shown below



(i)



(ii)

- d. i. Explain the meaning of the term induced magnetism  
ii. Induced magnetism is temporary. Comment on this statement
- e. State four properties magnetic field lines

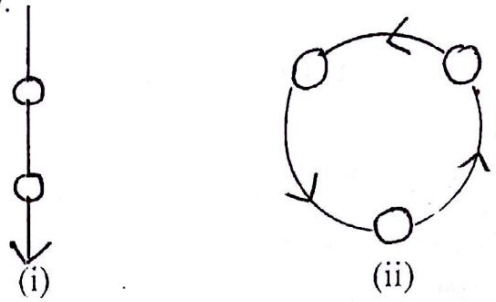
QUESTION 2

- a. i. What is an electromagnet?  
ii. Give two uses of an electromagnet
- b. State two differences between an electromagnet and a permanent magnet
- c. Steel is not good for making electromagnet. why?
- d. i. Define the term poles of a magnet  
ii. How can you change the polarity of an electromagnet?
- e. Name two factors on which the strength of magnetic field of electromagnet depend

QUESTION 3

- a. A body moving in a circular path, it reaches its original position after one round  
Find:
- Displacement of the body
  - Distance travelled by the body

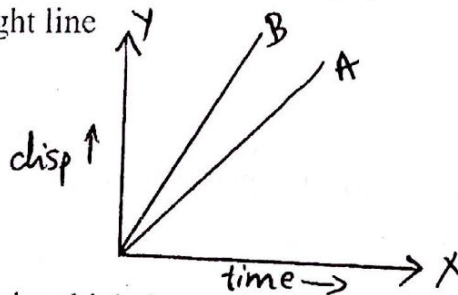
- b. Express the speed 72 km/h in m/s
- c. i. Define the term acceleration. Give its SI unit  
 ii. When is acceleration of a body negative (2)
- d. The motion of a freely falling body and motion of a body in circular path is shown below.



- i. What you can say about the speed and velocity of motion in both cases.  
 ii. Justify your answer (2)
- e. John drove South 120km/h and then East 150km/h. Determine:  
 i. the average speed for the whole journey (2)

#### QUESTION 4

- a. How will the equations of motion for an object moving with a uniform velocity, change (2)
- b. What do you infer if:  
 i. velocity-time graph is curved  
 ii. displacement-time graph is zig zag (2)
- c. Draw the shape of the acceleration-time graph for a body moving with  
 i. uniform velocity  
 ii. uniform retardation (2)
- d. Fig: shows displacement-time graph of two body A and B moving along a straight line



- i. Which vehicle is moving faster  
 ii. Give reason for your answer (2)
- e. An object dropped from a cliff falls with a constant acceleration  $10 \text{ m/s}^2$ . Find its speed 5s after it was dropped (2)

#### SECTION- B(40 marks)

#### QUESTION -I

- a. i. Sketch four magnetic field lines in a limited space on a horizontal plane in the earth magnetic field  
 ii. State two properties of magnetic field lines of earth

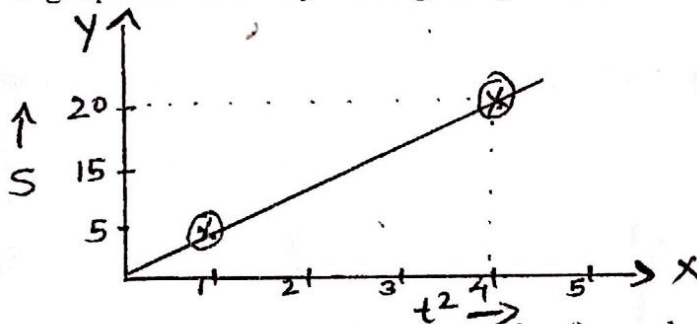
- b. Can two magnetic field lines intersect each other? Give reason to your answer (3)
- c. i. Define the term magnetic field (3)  
 ii. State whether magnetic field is a scalar or vector quantity (3)

### QUESTION 2

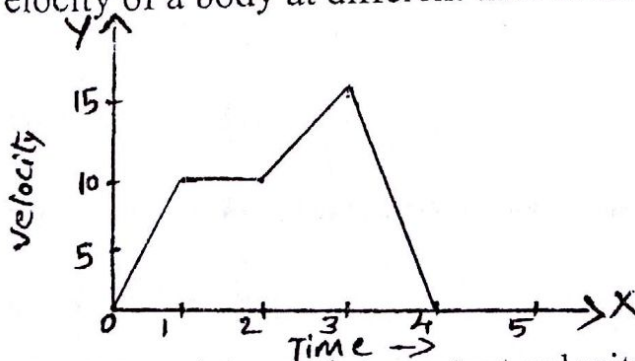
- a. State three advantages of an electro magnet over a permanent magnet (3)
- b. i. Name the material that used as the core of the electromagnet in an electric bell?  
 ii. How is the working of an electric bell affected if a.c current is used instead of d.c current (3)
- c. i. Draw a labelled diagram to make an electromagnet from a soft iron bar AB (4)  
 ii. State the polarity at ends A and B

### QUESTION 3

- a.  $s-t^2$  graph for a freely falling body is shown below



- i. Find acceleration due to gravity from above graph  
 ii. Draw an acceleration- time graph for a freely falling body
- b. A train is moving with a velocity of 90km/h. It is brought to stop by applying the brakes which produce a retardation of  $0.5 \text{ m/s}^2$ . Find:  
 i. the velocity after 10s  
 ii. The time taken by the train to come rest
- c. Velocity of a body at different time is shown in the fig: given below



- i. Which path have the constant velocity  
 ii. For which time interval the body has accelerated motion  
 iii. calculate retardation of the body

#### QUESTION 4

- a. Give one example of each type of the following motion
- Uniform velocity
  - Variable acceleration
  - Uniform acceleration
- b. Distinguish between instantaneous speed and average speed
- When is the instantaneous speed same as the average speed
- c. A girl walks along a straight line and comes back to her initial position. Displacement –time graph for this motion is shown below.
- Plot velocity-time graph for the same
  - Calculate the distance travelled and its displacement

