

GREENLAWNS HIGH SCHOOL
FINAL EXAMINATION YEAR 2018

SUBJECT: PHYSICS
TIME: 2 HOURS

CLASS: IX
MARKS: 80

All answers to be written on the answer booklet provided to you. You will not be allowed to write during the first 10 minutes. This time is to be spent in reading the question paper. The time given at the head of this paper is the time allowed for writing the answers.

SECTION – A (40 MARKS)

Attempt all questions from this section

Q.1 Answer the following.

(10)

- 1) Induced magnetism is temporary- explain the statement. (2)
- 2) a) Distinguish between alternating and direct current. (Definition) (2)
 b) Which instrument is used to control the current in electrical circuit?
- 3) What is an ecosystem? State the second law of thermodynamics. (2)
- 4) Explain the following terms with respect to spherical mirror- (2)
 a) Pole b) Centre of curvature.
- 5) Sound is a form of energy. Explain (2)

Q. 2 Answer the following.

(10)

- 1) Figure I and II represent two types of wave motions. Name the type of wave produced when- (4)
 a) A tuning fork is struck in the air.
 b) Name the regions labeled as A and B in fig II
 c) How many waves are shown in fig I.

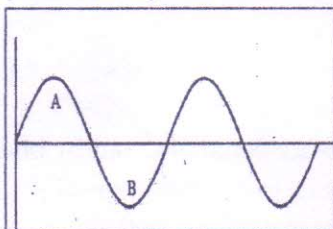


Fig I

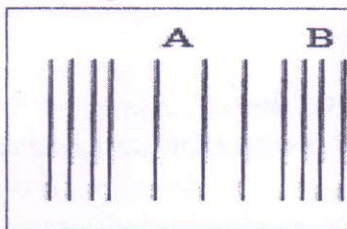
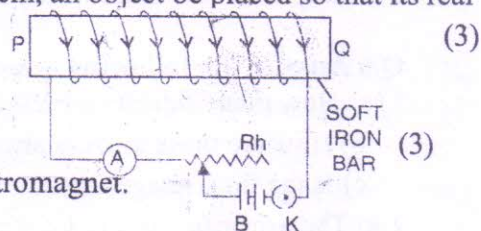


Fig II

- 2) At what distance in front of concave mirror of focal length 20 cm, an object be placed so that its real image of size four times that of the object obtained? (3)

3) Answer the following questions with the help of adjoining diagram:

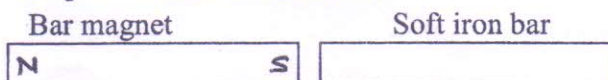
- i) State the polarity of electromagnet at end Q.
- ii) State any two ways of increasing the magnetic field of an electromagnet.



Q. 3 Answer the following.

(10)

- 1) a) Define electrical resistance (2)
 b) By what name (single word) is joule/ coulomb called?
- 2) a) What is a natural magnet? (2)
 b) A bar magnet and a soft iron bar are placed as shown in the figure. Draw the diagram and show the polarities in soft iron bar.



- 3)a) If we touch a metal knob of the door, we feel that it is cold. Give reason. (2)
 b) Define- Temperature.
- 4) The word AMBULANCE is written laterally inverted on the front of an ambulance vehicle. Give reason. (2)
- 5) The time interval between a lightning flash and first sound of thunder is 8 s. If speed of sound in air is 340 ms^{-1} Find the distance of flash from observer. (2)

Q.4 Answer the following. (10)

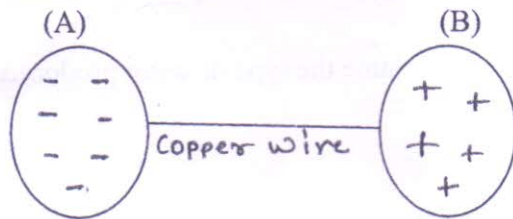
- 1) Draw a ray diagram to show formation of an image by a concave mirror for an object placed at centre of curvature. State the 3 characteristics of an image. (4)
- 2) What is the difference between Uniform and non-uniform magnetic field lines? Give one example of each. (3)
- 3) What are the disadvantages of using solar panel in production of electricity? (3)

SECTION B (40 MARKS)

(Attempt any 4 complete questions)

Q.5 Answer the following questions. (10)

- 1) There are two charged conductors one is Negatively charged (A) and other is Positively charged(B), they are connected with the help of copper wire. (2)



- a) Which conductor is at higher potential?
 b) In which direction the conventional current flows?
 2) A Body radiates out 300 calories of heat energy. How much heat energy is radiated out by body in joules? (2)
 3) Why does a driver use convex mirror instead of a plane mirror as a rear view mirror? Illustrate your answer with the help of a diagram. (3)
 4) State 3 characteristics of the medium required for propagation of sound? (3)

Q.6 Answer the following questions. (10)

- 1) a) How many mirrors are used in periscope? (4)
 b) How are these mirrors arranged in periscope?
 c) Is the final image formed by a periscope laterally inverted? Give reason for your answer.
 2)a) The astronauts use radio waves for communication on moon. Why? (4)
 b) Explain the term Supersonic.
 c) How do we use ultrasonic sound to find the flaws in metal castings?
 3) You are provided with a primary and secondary cell. Which cell will draw more current? Why? (2)

Q.7 Answer the following questions. (10)

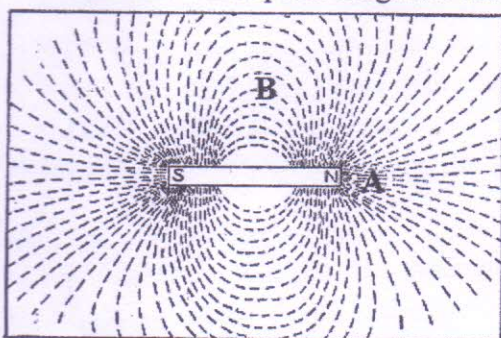
- 1) a) What is magnetic field of a magnet? (3)
 b) Magnetic field is a vector quantity- Explain.

- 2) a) What is conventional source of energy? (3)
 b) What is the similarity and dissimilarity between hydro energy and oceanic wave energy? (3)
 3) How do the following factors affect, if at all, the speed of sound in air: (4)
 a) Pressure b) Temperature c) Density d) Humidity

Q.8 Answer the following questions.

(10)

- 1) In a dark room, a parallel beam of light falls on a plane mirror and another parallel beam of light falls on a white wall. Explain why the light reflected by the mirror can only be seen in a certain direction but reflected light from the wall can be seen anywhere. Give reason. (2)
 2) A lamp draws current of 1.5A at 7.5V. Find the resistance offered by lamp while glowing. (2)
 3) a) State any two properties of magnetic field lines. (3)
 b) Magnetic field lines of a bar magnet are shown in the figure. A and B are the two points in the field. At which point magnetic field is maximum?



- 4) The anomalous expansion of water helps in preserving the aquatic life during the very cold weather. Explain. (3)

Q.9 Answer the following questions.

(10)

- 1) a) Distinguish between electromagnet and permanent magnet (2 Points) (4)
 b) Name the material used for making an armature of an electric bell. Give reason for your answer.
 2) A longitudinal wave travels at a speed of 0.5 ms^{-1} and the frequency of wave is 25 Hz. Find the separation between the two consecutive compressions. (2)
 3) How to differentiate between Concave and convex mirror without touching it? (2)
 4) How can we get proper illumination of a house naturally? (2)

Q.10 Answer the following questions.

(10)

- 1) a) Why does an iron-bar buried inside the earth along N-S direction becomes a weak magnet? (3)
 b) Why does a compass needle placed at a neutral point rest in any direction?
 c) State the position of neutral points when a magnet is placed with its axis in the magnetic meridian And with its north pole pointing towards geographic north.
 2) State any 3 human activities responsible for the increase of methane gas in the atmosphere. (3)
 3) What is sound? How is sound produced? (2)
 4) Draw a circuit diagram showing bulb, tapping key and battery. (2)