GREENLAWNS HIGH SCHOOL
PHYSICS FINAL EXAMINATION 2025-26

STD. 9 **TIME: 2 HR.**
DATE: **MARKS: 80**

NOTE:

1] Answer to this paper must be written on the paper provided separately.
2] You will not be allowed to write during the first 10 minutes. This time is to be spent in reading the paper.
3] The time given at the head of this paper is the time allowed for writing the answers. This paper has 4 pages (8 sides).
4] Section A is compulsory. Attempt any 4 questions from Section B.
5] The intended marks for a question or parts of questions are given in the brackets [ ].

SECTION A [40 MARKS]
ALL QUESTIONSS IN THIS SECTION ARE COMPULSORY.

QUESTION 1

Choose the most correct answers to the questions from the given options. [1

i) The waves carry _____ energy of the vibrating particles with them so as to produce a sensation of hearing in our ears.
a) mechanical b) potential c) nuclear d) atomic

ii) Which of the following combination of letters does not show lateral inversion?
a) I, C, A b) I, H, X c) A, D, L d) I, P, L

iii) The transverse waves can be produced inside
a) Gases b) Liquids c) Solids d) All of these.

iv) The presence of _____ in the path makes a circuit incomplete and the current does not flow through it.
a) conductor b) ammeter c) voltmeter d) insulator

v) The speed of ultrasound in air is
a) less than audible sound b) more than audible sound
c) equal to the audible sound d) equal to the speed of light

vi) The force between the two charges is _____, when they are at infinite separation.
a) finite b) infinite c) zero d) variable

Contd….

vii) Which of the following is not a correct statement/s for a magnet placed in the earth's magnetic field?

1. Neutral points are always at an equal distance from the magnet.
2. The position of neutral points depends on the direction of the magnet in the earth's magnetic field.
3. The position of neutral points doesn't depend on the direction of the magnet.
4. The magnetic field strength is zero at the neutral points.

a) 1 and 3 b) 3 c) 2 d) 2 and 4

viii) The temperature of a body depends on the average _____ of the molecules.

a) Kinetic energy b) Potential energy
c) Atomic energy d) Mechanical energy

ix) In case of terms related to a spherical mirror, the correct statement/s is/are

1. The radius of curvature is the radius of a sphere of which the mirror is a part.
2. The geometrical centre of a spherical surface of a mirror is called the centre of curvature of the mirror.
3. Principal axis is the straight line joining the pole of the mirror to its aperture.

a) 1 and 2 b) 2 and 3 c) 2 d)3

x) Which of the following device does not use an electromagnet?

a) Electric crane b) Microphone c) Relay d) Electric fan

xi) The temperature at which the pressure and volume of a gas become zero is

a) 0 °C b) 0 °F c) 0 K d) 273 K

xii) For a convex mirror, the value of 'u' is _____ and the value of 'v' is _____.

a) positive, positive b) positive, negative
c) negative, negative d) negative, positive

xiii) Echocardiography is used to obtain the image of

a) liver b) lungs c) heart d) kidney

xiv) LED stands for

a) Long lasting Electric Device b) Light Emitting Diode
c) Laser Electric Device d) Laser Emission Device

xv) An iron rod buried inside the earth along _____ direction becomes a magnet.

a) Equatorial b) North-South c) East-West d) Any direction

Contd….

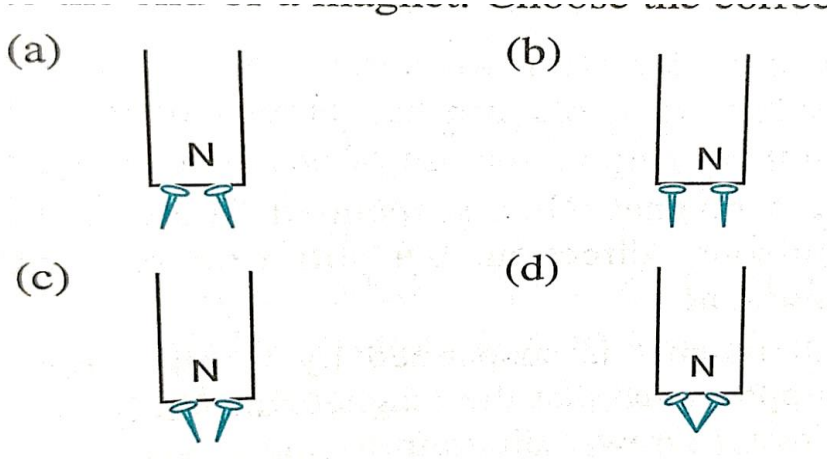
QUESTION 2

A] i) Write the full form of CFL. **[2]**

ii) Why is the use of CFL advisable?

B] Calculate the amount of work done in moving a charge of 3.58 C through a circuit with potential difference of 12 V. **[2]**

C] i) The figure given below shows two iron nails attracted to the end of a magnet. Choose the correct figure. **[2]**



ii) Draw a neat labelled correct figure in a similar manner (as given in Q.2 C-i, using two nails and a horse shoe shape magnet instead of a bar magnet. Show one nail at each pole of a horse shoe shaped magnet.

D] With respect to the propagation of sound which property of the medium is required in each of the following cases: **[2]**

i) For particles of the medium to vibrate about their mean positions.

ii) For particles of the medium to store mechanical energy.

E] Find the number of images formed, of an object which is placed on the angle bisector when two plane mirrors are kept at 60^{o} inclined to each other. **[2]**

F] i) What are storage cells? **[2]**

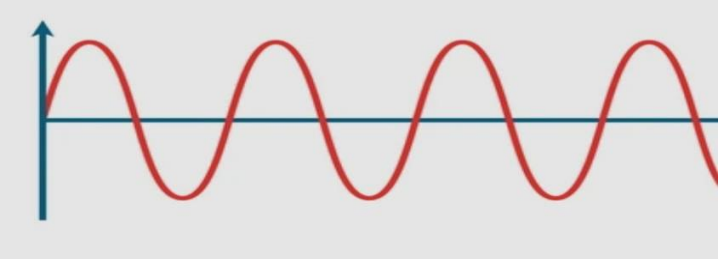
ii) Do the storage cells have a high internal resistance or a low internal resistance?

Contd……..

G] Name the following: **[3]**
i) The thermal expansion in which volume of a substance increases.
ii) The cgs unit of heat energy.
iii) The interchange of the left and right sides in the image of an object in a plane mirror.

QUESTION 3

A] Observe the graph given below. What does 'P' and 'Q' represent in the graph? **[2]**



B] Name the physical quantities whose units are i) coulomb ii) ampere **[2]**

C] i) What is the net magnetic field at neutral point? **[2]**
ii) In which direction the magnetic needle will rest at neutral point?

D] i) Express the potential difference between two conductors having potential V_1 and V_2 respectively, when work 'W' is done in transferring a test charge 'q' from one conductor to the other. **[2]**
ii) Potential difference is a _____ quantity. (scalar/vector)

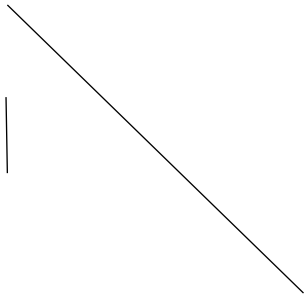
E] Give two causes of degradation (dissipation) of energy. **[2]**

Contd……..

SECTION B (40 MARKS)
ATTEMPT ANY 4 COMPLETE QUESTIONS FROM THIS SECTION

QUESTION 4

A] Copy the diagram given below in your answer booklet and complete it to form the image AB of the object AB by the plane mirror. Use at least two rays emerging from points A and B each to draw the image. [3]



B] i) How much speed is needed to rotate the blades of a windmill? **[3]**
ii) Name the radioactive element which is used in a nuclear power plant to generate an electrical energy.
iii) Which type of electric current does a solar panel produce?

C] How do the following factors affect the speed of sound in air? **[4]**
i) Wavelength of a sound wave ii) Humidity in the air.
iii) Amplitude of a sound wave iv) Direction of the wind.

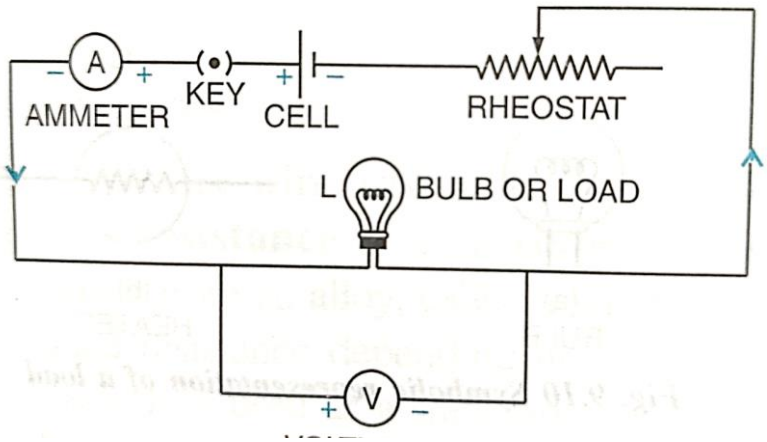
QUESTION 5

A] Using the points given below distinguish between the magnetic field lines of a bar magnet and the magnetic field lines of the earth. **[3]**
i) Shape ii) Direction iii) Nature

B] i) Write the formula for linear magnification of a mirror in terms of an object distance and the image distance. **[3]**
ii) For which type of mirror/s the linear magnification is always positive?
iii) Write the SI unit of linear magnification.

Contd…..

C] Observe the figure given below and answer the questions that follow: **[4]**



i) Identify 'X' and 'Y'.
ii) Write the function of 'Z'.
iii) How is the voltmeter connected in the circuit?

QUESTION 6

A] i) State Ohm's law. **[3]**
ii) Which physical quantity has to be constant for holding Ohm's law true? Why?

B] A convex mirror forms an erect image of an object of size half the size of an object. If radius of curvature of the convex mirror is 40 cm, find the position of the object. **[3]**

C] Answer the following questions with respect to the Hope's apparatus. **[4]**
i) What does the Hope's apparatus demonstrate?
ii) Which of the two thermometers (upper or lower) show no change in the reading in the beginning?
iii) Draw a graph showing variation in density of water with temperature in the range 0 ºC to 10 º C.

QUESTION 7

A] Name and state the laws which govern the process of entrance, transformation and diffusion of energy in the ecosystem. **[3]**

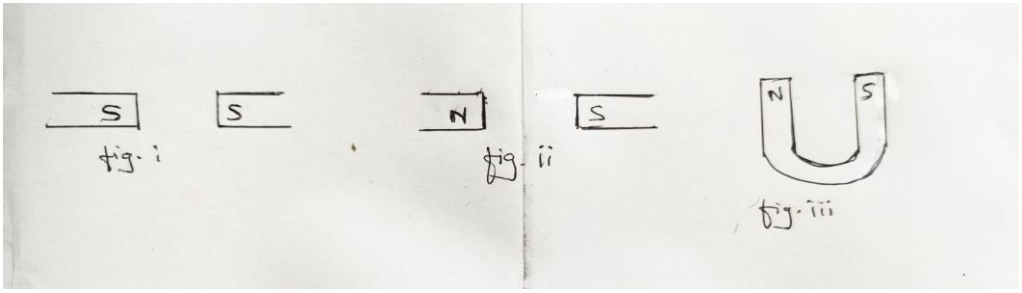
Contd……..

B] Draw a neat labelled diagram showing the pattern of magnetic field lines near a bar magnet placed with its north pole pointing towards the geographic north. Also indicate the position of neutral points by marking 'X'. **[3]**

C] The speed of sound in air is 340 ms^{-1} and in water 1650 ms^{-1}. It takes 4.4s for sound to reach a certain distance from the source placed in water. Find: i) the distance ii) time taken for sound to travel the same distance as in Q.7 C- i, when the source is placed in air. **[4]**

QUESTION 8

A] Two poles of magnet/s are shown in the figures given below. Copy all the figures in your answer booklet and draw the magnetic field lines indicating the direction between two poles of magnet/s in each figure. **[3]**



B] i) Name the phenomenon of warming of the earth's surface and its lower atmosphere by absorption of infrared radiations of long wavelength emitted out from the surface of the earth. **[3]**
ii) Give two examples of the gases responsible for the phenomenon mentioned by you in Q.8 B- i.

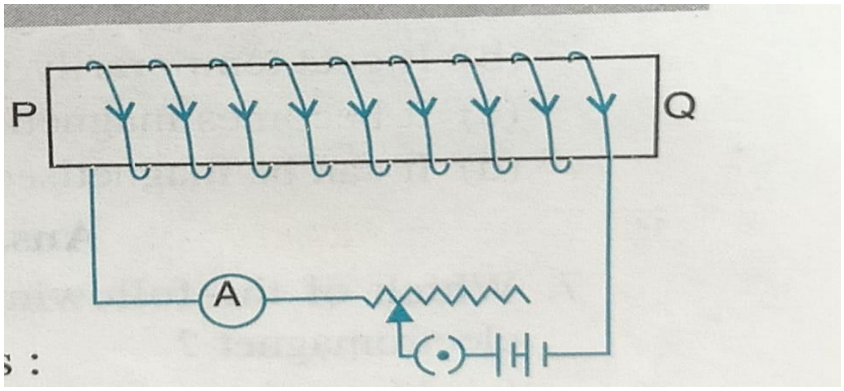
C] i) Calculate the current flowing through a wire of resistance 6 Ω, connected to a battery of potential difference of 2400 mV. **[2]**
ii) Which type of a spherical mirror is used in each of the following cases: **[2]**
a) As a dentist's head mirror b) As a reflector in street lamps.

Contd……

QUESTION 9

A] Draw a neat labelled ray diagram using a suitable spherical mirror which finds its application as a reflector in head light of automobiles. **[3]**

B] Observe the figure given below and answer the questions that follow **[3]**



i) What does the given arrangement represent?
ii) Identify the polarity at P and Q end.
iii) What will be the polarity at P and Q ends, if the direction of the current in the arrangement is reversed?

C] Identify and label each of the electric components given below: **[4]**
[Do not copy the figures]

i) ii) iii) iv)