GREENLAWNS HIGH SCHOOL

FINAL EXAMINATION 2022-23

STD. 9 TIME: 2 HRS.

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 7 pages.

4] Section A is compulsory. Attempt any 4 complete 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 QUESTIONS IN THIS SECTION ARE COMPULSORY.

QUESTION 1

A] Choose the most correct answers to the questions from the given options: [15]

i) An example of a conventional source of energy is _____.

a) Natural gas b) Biomass c) Wood d) Nuclear fuel

ii) The reflection from a _____ surface enables us to see the objects around us.

a) smooth b) rough and uneven c) smooth and polished d) plane

iii) The factor which does not affect the speed of sound in a gas is __

a) humidity b) temperature c) pressure d) density

Contd…….

iv) The anode of a cell in a circuit is always at _____.
a) zero potential b) higher potential c) lower potential d) same potential as that of a cathode.

v) A gas which is not responsible for the greenhouse effect is _____
a) Carbon dioxide b) Nitrous oxide c) Methane d) Sulphur dioxide

vi) The size of the image formed by a convex mirror is _____
a) always magnified than that of the object size
b) always same as that of the object size
c) always diminished than that of the object size
d) dependent on the position of the object from the mirror

vii) Sound in air propagates in the form of _____
a) transverse waves b) longitudinal waves c) both transverse waves and longitudinal waves d) electromagnetic waves

viii) _____ among the following is an example of an insulator.
a) Brass b) Mercury c) China clay d) Impure water

ix) In a limited space, the magnetic field lines of the earth are _____
a) curved lines b) parallel lines c) parallel equidistant straight lines d) parallel equidistant curved lines

x) The SI unit of a physical quantity which tells us the thermal state of a body is _____.
a) joule b) kelvin c) kilocalorie d) degree celcius

Contd…….

xi) The speed of the ultra sound in air is _____.

a) above 20,000 Hz b) above 330 ms^{-1} c) below 20,000 Hz

d) 330 ms^{-1}

xii) The electric component which is used to detect the presence of a weak current in the electric circuit is a/an _____

a) ammeter b) voltmeter c) galvanometer d) cell

xiii) The most non-polluting and efficient lightning device is _____.

a) CFL b) LED c) fluorescent light d) tube light

xiv) A man can hear the sound of a frequency _____

a) 5 Hz b) 5000 Hz c) 500 kHz d) 5 Mhz

xv) The strength of an electromagnet can be increased by _____

a) using an alternating current of high frequency

b) reversing the direction of the current

c) decreasing the number of turns of the coil

d) increasing the current in the coil

B] Observe the figure given below and answer the questions that follow: [5]

i) Identify and write the type of mirror shown in the figure.

Contd…..

ii) Name the point ‘X’ and define it.
iii) What does the distance ‘Y’ represent?
iv) If the distance ‘Y’ is 34 cm, then at what distance will be the focus of the mirror?
v) Copy the diagram in your answer booklet and complete it for the ray which is incident at point ‘P’.

QUESTION 2
A] Distinguish between the pairs on the basis of what is given in the brackets. [5]
i) Primary cell and Secondary cell (Energy conversion)
ii) Real image and Virtual image (method of formation)
iii) Sound and Light (Nature of waves)
iv) 1^{st} law of thermodynamics and 2^{nd} law of thermodynamics (statement)
v) Heat and Temperature (method of measurement)

B] Answer the questions in contest with the statement given below:
‘Water expands on cooling’ [5]
i) Name the phenomenon.
ii) At what temperature does it occur?
iii) What happens to the density of water during this phenomenon?
iv) Give two consequences of the phenomenon mentioned by you in Q.2-B-i.

Contd……

QUESTION 3

Observe the figure given below and answer the questions based on it. [10]

i) Label the parts B to E.

ii) Is the current flowing through the circuit? Why do you say so?

iii) State the direction in which the current will flow through the circuit.

iv) Which type of current does the electric component 'A' provide?

v) Why the components B & C in the circuit are connected in series and parallel respectively?

SECTION B (40 MARKS)

ATTEMPT ANY 4 COMPLETE QUESTIONS FROM THIS SECTION.

QUESTION 4

i) Draw a neat labelled diagram of Hope's apparatus. [3]

ii) State the number of images of an object placed between two plane mirrors when they are inclined to each other at 45^{o} in each of the following cases: [3]

a) placed asymmetrically b) placed symmetrically

Contd…..

iii) a) Write the frequency and speed of the ultrasonic sound. [4]
b) Give two properties of ultrasonic sound other than mentioned by you in Q.4-iii-a.

QUESTION 5

i) Draw a mirror image of the word 'SCHOOL' when it is kept in front of a plane mirror. Also write any two characteristics of the image drawn by you. [3]
ii) a) What do you mean by magnetic induction?
b) Explain the statement: [3]
'Induction precedes attraction'
c) a) Define: Resistance [4]
b) Write the SI unit of resistance.
c) State two factors which affect the resistance of a conductor.

QUESTION 6

i) a) A conductor carries a current of 0.8 A. Find the amount of [3]
a charge that will pass through it in one minute.
b) Diagrammatically represent a symbol of alternating source of current.
ii) a) Name the effect in which there is an increase in average [3]
effective temperature near the earth surface due to an increase in the amount of greenhouse gases in its atmosphere.
b) Give any two impacts of the effect mentioned by you in Q.6-ii-a on life on the earth.
iii) Draw a neat labelled ray diagram to show the formation of [4]
image of an object kept in front of a diverging mirror. Write the nature of the image formed.

Contd…..

QUESTION 7

i) Draw 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 the neutral points. [3]

ii) The sea waves of time period 15 sec. have wave velocity 20 ms^{-1}. Find: a) the wavelength of these waves
b) the horizontal distance between a wave crest and its adjusting wave trough. [3]

iii) Give two advantages and two limitations of using wind as a source of energy. [4]

QUESTION 8

i) a) Sam has selected an electromagnet over a permanent magnet for his research work. Account for his selection by giving two points. [3]

b) Give one use of an electromagnet other than mentioned above in Q.8-i-a

ii) An object is placed at a distance of 20cm in front of a convex mirror of radius of curvature 8 cm. At what distance the image will be formed? [3]

iii) Give scientific reasons for each of the following: [4]

a) The medium required for propagation of sound should be frictionless.

b) The LED bulbs are preferred for lighting.

c) A concave polished metallic surface is used as a reflector in search light.

d) Nuclear energy is not a clean source of energy.

BEST OF LUCK.