GREENLAWNS HIGH SCHOOL

DATE: 10/02/2025 **STD. VIII** **MARKS: 80**

DAY: Monday **PHYSICS** **TIME: 2 hours**

Section-I

Q1 Choose the correct answers to the questions from the given options. **15m**

(Do not copy the questions, write the correct answers only.)

i. The devise which is used to limit the current in an electric circuit is
   a. fuse
   b. socket
   c. wire
   d. metal

ii. An Atom is electrically _____
   a. positive
   b. negative
   c. neutral
   d. none of the above

iii. When white light passes through a prism, it _____
   a. converges
   b. diverges
   c. scatters
   d. disperses

iv. Which of the following statement is correct
   a. Sound can travel in solid
   b. Sound cannot travel in vacuum
   c. Sound needs a medium for its propagation
   d. All of the above

v. The conductor of electricity is_____
   a. tap water
   b. glass
   c. ebonite
   d. wood

vi. Which of the following statement is incorrect
   a. Equal masses of different substance have different volumes
   b. Equal volumes of different substances have different masses
   c. Density of a substance is volume per unit mass
   d. None of the above

vii. When two objects are rubbed, the object that loses free electron, becomes_____ charged
   a. negatively
   b. positively
   c. no charge
   d. neutrally

viii. The _____ force of the liquid acts vertically upwards.
   a. buoyant
   b. thrust
   c. gravitational
   d. normal

xi. The number of vibrations produced by a particle of the medium in one second is called the _____ of the wave
   a. amplitude
   b. frequency
   c. time period
   d. speed

x. Which of the following types of wires is primarily used to protect individuals from electric shocks caused by faulty appliances by providing a safe path for the current to flow?
   a. Live wire
   b. Ground wire
   c. Neutral wire
   d. All of the above

xi. A body of density greater than the density of liquid, _____ inside the liquid
   a. float
   b. sink
   c. melt
   d. dissolve

xii. A medium is said to be _____, if the speed of light in it decreases.
   a. rarer
   b. transparent
   c. mild
   d. denser

xiii. Sound travels in air in form of _____ waves
   a. longitudinal
   b. oscillational
   c. transverse
   d. none of the above

xiv. _____ is a dimensionless quantity.
   a. Density
   b. Volume
   c. Relative Density
   d. Weight

xv. The angle at which the refracted ray during a mirage completely reflects is __
   a. 50°
   b. 90°
   c. 40°
   d. 45°

Q2 State whether the underlined word in the following sentence makes the statement true or false. If the statement is false, correct only the underlined part. **5m**

i. Through induction, a positively charged body can charge an uncharged body ***positively***.

ii. An electric current is constituted by the flow of ***protons***.

iii. One compression and ***two*** rarefaction together constitute a wave.

iv. Light travels at a ***slower*** speed in glass than in air.

v. The density of a liquid ***decreases*** with increase in volume.

Q3 **Match the items in Column A with those in Column B. Rewrite the answers** **5m**

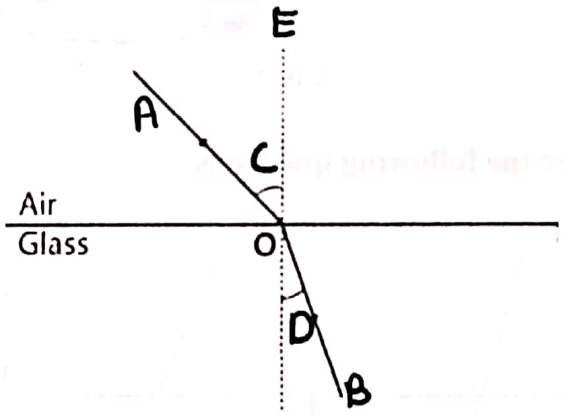
Column A	Column A
i. Loudness	a. Wave form
ii. Pitch	b. Single frequency
iii. Quality	c. Frequency
iv. Monotone	d. Sound level above 120dB
v. Noise	e. Amplitude

Q4 **Name the following.** **5m**

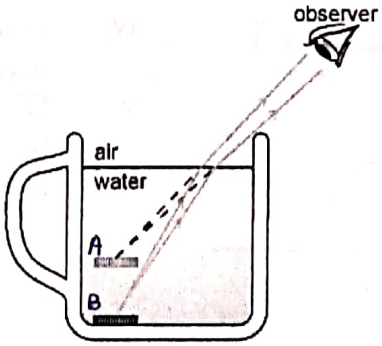
i. Name a vessel used to measure volume of a liquid.
ii. Substances that have large number of free electrons are called.
iii. The maximum displacement of particle from its mean position is called.
iv. What is a transparent medium surrounded by five planes with triangular cross sections.
v. Electricity at rest is called as.

Q5 **Label the following diagram (Do not draw the diagram)** **5m**

(i) A - _____
(ii) B - _____
(iii) C - _____
(iv) D - _____
(v) E - _____



Q6 Observe the figure and answer the following questions. **5m**



i. At which point can the observer see the coin?
ii. Which is the actual position of the coin?
iii. How does the light travel? (Write the medium)
iv. In this case the refracted ray will move towards or away from the normal?
v. What is this phenomena called as?

Section-II

6m

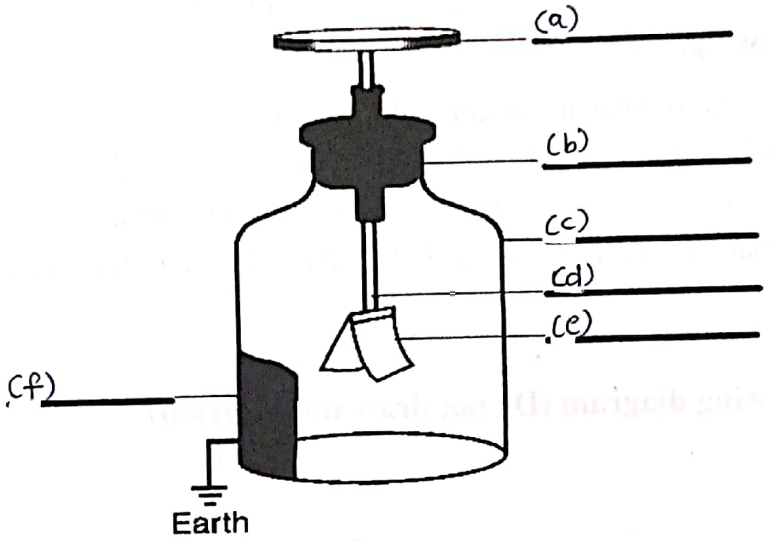
Q7 Give scientific reasons for the following

i. Why is MCB better than fuse.
ii. Glass rod rubbed with silk gets positively charged.
iii. It is easier for a man to swim in sea water than in river water.

4m

Q8 Answer the following

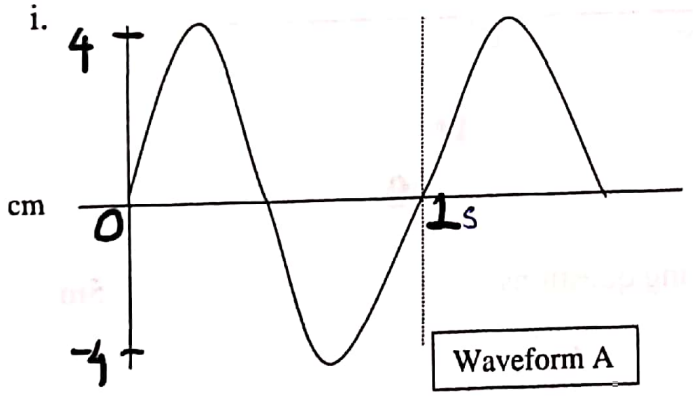
i. What is an electroscope
ii. Label the following diagram (Do not draw the diagram)

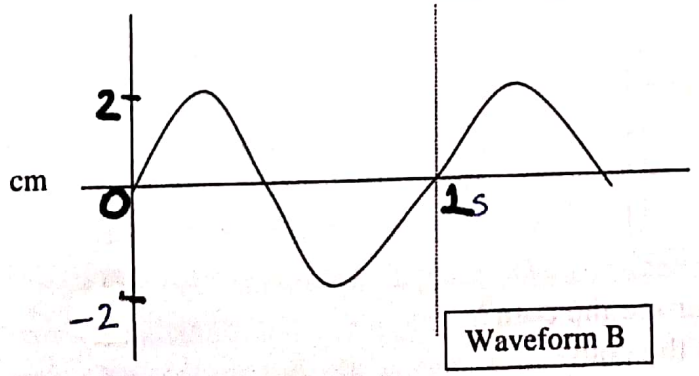


Q9 Answer the following questions

5m

i.



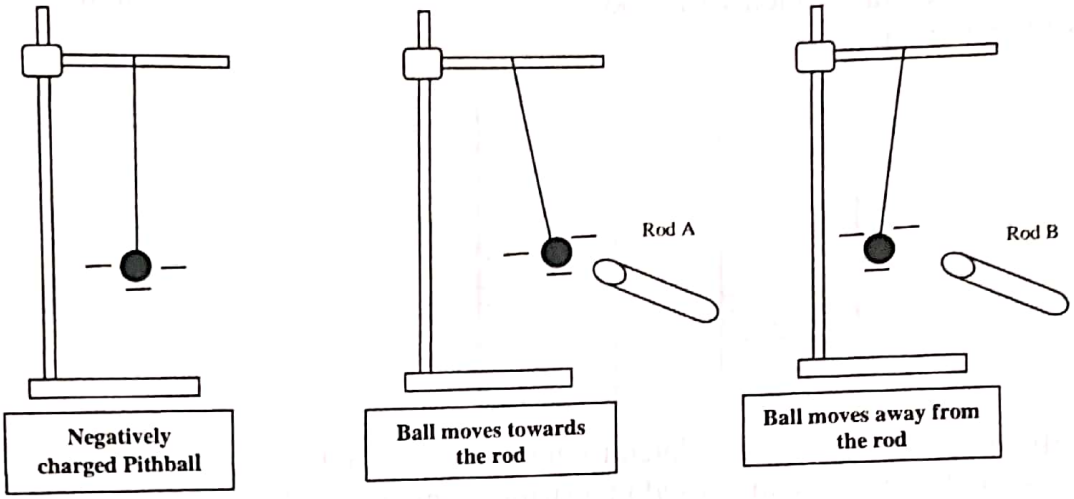


i. What is the frequency of wave-form A
ii. What is the amplitude of wave-form B
iii. Which wave-form has a louder sound
iv. Find the time period of wave-form B
v. Give the relationship between loudness and amplitude

ii. Give any 2 characteristics of FUSE

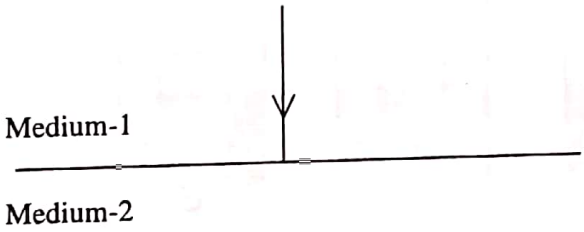
2m

iii. Identify the charge on Rod A and Rod B (Do not draw the diagram) **2m**



Rod A – _____ Charge
Rod B - _____Charge

iv. Complete the ray diagram (Draw the diagram in your answersheet) **1m**



Q10 Answer the following questions

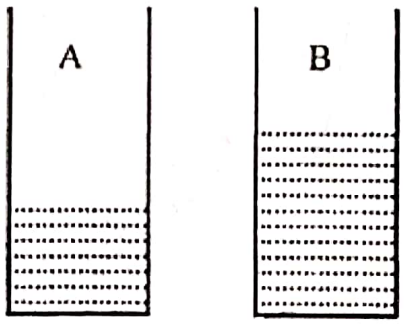
i. A rectangular metal bar is used in the construction of a bridge. The bar is 40 cm long, 10 cm wide, and 5 cm thick. If the bar has a mass of 20 kg, find its density in $kg\ m^{-3}$ **4m**

ii. Distinguish between charging by conduction and induction based on the following points only **2m**
   a. Physical Contact
   b. Final charge state

iii. An under-sink water heater is rated 5.5 kW, 220V **4m**
   a. Find the safe current that can flow through it
   b. Can fuse of current rating 10A be used with it

Q11 Answer the following questions

i. a. The following figure shows two jars A and B containing water up to different heights, which will produce a sound of higher pitch when air is blown on them? **3m**



b. Explain how frequency is related to the pitch of sound?

c. How can the pitch be increased in a stringed instrument?

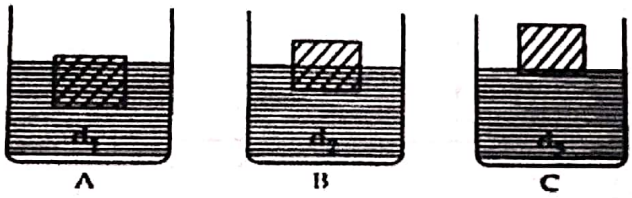
ii. The following figure shows three identical blocks of wood floating in three different liquids (A, B and C of densities d_1, d_2 and d_3 respectively. **4m**

a. In which liquid will the wooden block have the lowest density?

b. What will be the apparent weight of the wooden block in liquid A

c. Which liquid will have the least density?

d. What will happen when weight of the wooden block (W) is greater than the buoyant force (F_B)



iii. What is the material used to make the lightning conductor? And explain how does the lightning conductor protect the building from lightning? **3m**

Solution SET

GERRY FERNANDES

GREENLAWNS HIGH SCHOOL

DATE: **STD. VIII** **MARKS: 80**

DAY: **PHYSICS** **TIME: 2 hours**

[FIGURES TO THE RIGHT INDICATE FULL MARKS]

Section-I

Q1 **Choose the correct answers to the questions from the given options.** **15m**
(Do not copy the questions, write the correct answers only.)

i. (a) fuse
ii. (c) neutral
iii. (d) disperses
iv. (d) All of the above
v. (a) tap water
vi. (c) Density of a substance is volume per unit mass
vii. (b) positively charged
viii. (a) buoyant
xi. (b) frequency
x. (b) ground wire
xi. (b) sinks
xii. (d) denser
xiii. (a) longitudinal
xiv. (c) Relative Density
xv (b) 90°

Q2 **State whether the underlined word in the following sentence makes the statement true or false. If the statement is false, correct only the underlined part.** **5m**

i. False: negatively
ii. False: electrons
iii. False: one
iv. True
v. True

Q3 **Match the items in Column A with those in Column B. Rewrite the answers** **5m**

Column A	Column A
i. Loudness	e. Amplitude
ii. Pitch	c. frequency
iii. Quality	a. Wave form
iv. Monotone	c. single frequency
v. Noise	d. sound level above 120dB

Q4 **Name the following.** **5m**

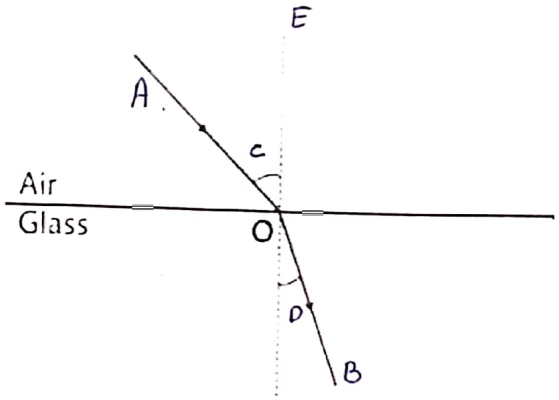
i. Measuring cylinder/ Eureka can/Measuring beaker
ii. Conductor

iii. Amplitude
iv. Prism
v. Static Electricity

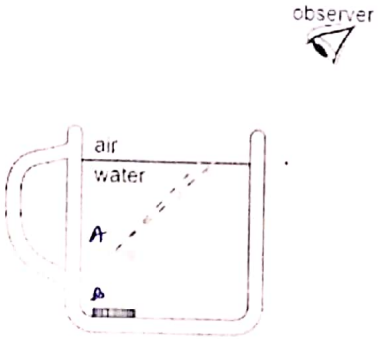
Q5 Label the following diagram (Do not draw the diagram) **5m**

(i) A – Incident ray
(ii) B – Refracted ray
(iii) C - Normal
(iv) D – Angle of incidence
(v) E – Angle of refraction

(1m each)



Q6 Observe the figure and aswer the following questions. **5m**



i. Point A
ii. Point B
iii. From water to air.
iv. Away from the normal
v. Refraction of light

} 1m per question

Section-II

Q7 Give scientific reasons for the following (2m each) => 1m each point 6m

i. a. When there is an excess flow of current in the circuit the mcb falls down
b. While a fuse will melt down, thereby increasing the cost of replacing it, hence an mcb is superior than the fuse

a. When a glass rod is rubbed with silk, the free electrons from the glass rod are transferred to the silk
b. The glass rod loses electrons, so it becomes positively charged

ii. a. Sea water contains salt and so its density is more than the density of the river water
b. The weight of man gets balanced by the less immersed part of his body in the seawater compared to salt water, hence it is easier to swim in sea water than on river water

Q8 **Answer the following**

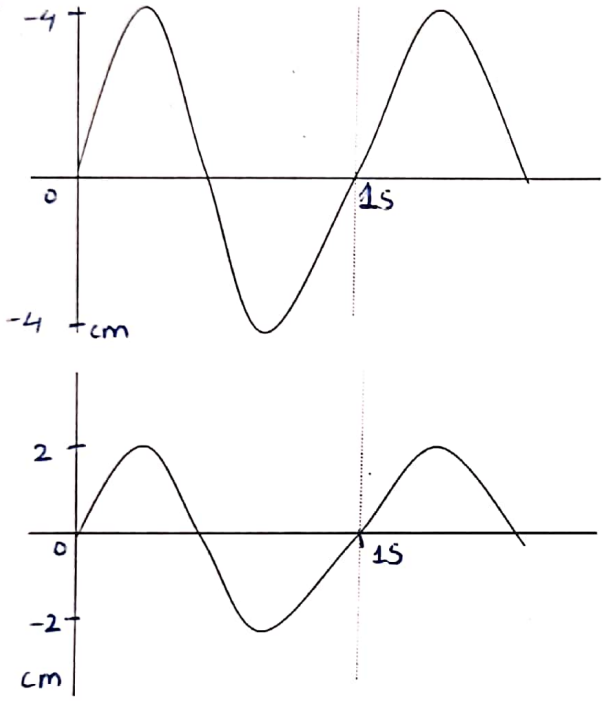
i. An electroscope is a devise used to detect the presence and nature of charge on a body. (1m)

ii. (a) brass disc
(b) insulator plug
(c) glass case
(d) brass rod
(e) gold leaf
(f) metal foil

(half mark each labelling)
OR
Any 3 labelling correct
(3m)

Q9 **Answer the following questions**

i. **5m**

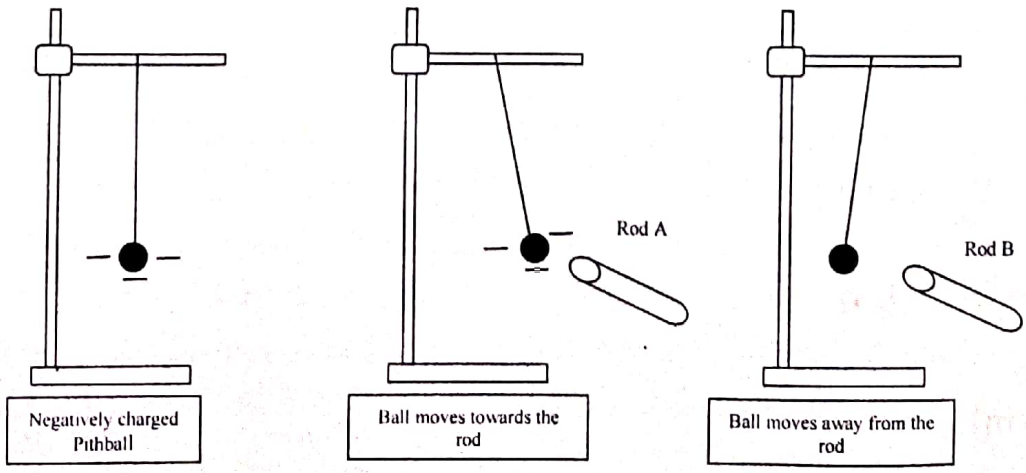


i. 1 Hz
ii. 2 cm
iii. Waveform A
iv. 1 s
v. Loudness is directly proportional to the square of the amplitude.
OR
$L \propto a^2$

(1m each)

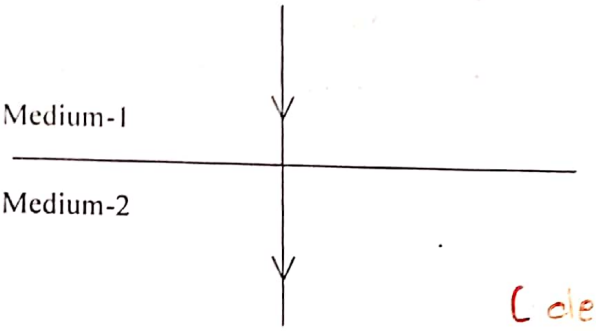
ii. **2m**
a. It is a short wire with low melting point
b. It is an alloy of lead and tin
c. Thickness of the wire depends on the current rating
(any 2 points) 1m each)

iii. Identify the charge on Rod A and Rod B (Do not draw the diagram) **2m**



Rod A – Positive Charge
Rod B - Negative Charge (1m each)

iv. Complete the ray diagram (Draw the diagram in your answersheet)



1m

1m for complete diagram

(deduct 1/2m for no arrows shown)

Q10 Answer the following questions

i. Length = 40cm = 0.4m
Width = 10cm = 0.1m
Thickness = 5cm = 0.5m

(1m) OR any 1 place conversion

4m

Volume = l×b×h = 0.4×0.1×0.5 = 0.002 m^3 (1m)
Mass = 20 kg

$$Density = \frac{Mass}{Volume} = \frac{20}{0.002} = 10{,}000\ kg\ m^{-3}$$ (1m) (1m)

ii.

	Conduction	Induction
Physical Contact	The charged body is touched with the uncharged body	The charged body is not actually touched with the uncharged body, but it is only kept close to it
Final charge state	The charge on the uncharged body is of the same type of the charged body	The charge on the uncharged body is of the opposite type to that of the charged body

2m

iii. P = 5.5 kW = 5500W (1m)

4m

a. $I = \frac{P}{V}$

$= \frac{5500}{220}$ (1m)

$= 25A$ (1m)

b. No
(1m)

Q11 Answer the following questions

i. **3m**

a. Jar B will produce a high-pitched sound
b. Higher the frequency, higher will be the pitch
c. By vibrating the string under high tension
Or
By vibrating a thinner string

1m each

ii. **4m**

a. C
b. Zero
c. A
d. Sink

one mark each

iii. **3m**

Copper
When a charged cloud passes over the building, an opposite charge is induced on the spike, the excess charge then passes through the rod, into the earth.