

ICSE Board
Class VII Physics
Sample Paper – 4

Time: 2 hrs

Total Marks: 75

General Instructions:

1. All questions are **compulsory**.
 2. Questions 1 to 15 carry one mark each.
 3. Questions in 2A and 2B carry one mark each.
 4. Questions in 3A and 3B carry one mark each.
 5. Question in 4A and 4B carries one mark each.
 6. Questions in 5A carry one mark each and 5B carry five marks.
 7. Questions in 6 carry two marks each.
 8. Question 7A and 7B carry ten marks in total.
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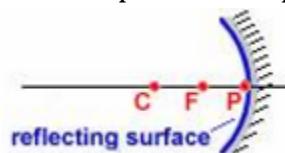
Question 1

Choose the correct answer out of the four available choices given under each question. [15]

1. The relative density of a substance is expressed by comparing its density to the density of
(a) air
(b) mercury
(c) iron
(d) water
2. The time period of a 'seconds pendulum' is
(a) 1 sec
(b) 2 sec
(c) 1 min
(d) 2 min
3. When the Sun is behind you, your shadow will be
(a) behind you
(b) in front of you
(c) on your left side
(d) on your right
4. The intensity of sound is measured in
(a) joule
(b) decibel
(c) watt
(d) None of the above

5. The pupil of your eye is a net
(a) Absorber of radiant energy
(b) Emitter of radiant energy
(c) Both (a) and (b)
(d) None of the above
6. An object completes one round of a circle of radius 7 m in 20 seconds. The distance travelled after 10 seconds is
(a) 22 m
(b) 24 m
(c) 26 m
(d) 28 m
7. The electrode connected to the positive terminal of a battery is called the
(a) Anode
(b) Pole
(c) Cathode
(d) Photo diode
8. An echo of the sound produced can be heard only if it reaches our ear after
(a) $1/15^{\text{th}}$ of a second
(b) $1/13^{\text{th}}$ of a second
(c) $1/10^{\text{th}}$ of a second
(d) $1/5^{\text{th}}$ of a second
9. A mirror changes the _____ of light that falls on it.
(a) Direction
(b) Optical density
(c) Speed
(d) None of the above
10. Which one of the following types of surfaces is the best radiator and absorber of heat?
(a) white, silvery
(b) red, shiny
(c) dull, black
(d) polished, black

11. Name the instrument used to control current in an electric circuit.
- Ammeter
 - Cell
 - Plug key
 - Rheostat
12. According to the laws of reflection,
- $\angle i = \angle r$
 - $\angle i > \angle r$
 - $\angle r > \angle i$
 - $\angle i \neq \angle r$
13. Radius of curvature of a concave mirror is always _____ to the mirror.
- parallel
 - perpendicular
 - inclined at 60°
 - inclined at 45°
14. Cellophane paper is an example of
- an opaque object
 - a translucent object
 - a transparent object
 - an luminous object
15. In the figure below, the distance between point P and point F is,



- Centre of curvature
- Radius of curvature
- Focal length
- Aperture

Question 2

(A) Answer the following questions in one word or one sentence. [5]

1. Define acceleration.
2. What is the normal human temperature?
3. What kind of mirror provides images of large areas?
4. What is the S.I. unit of electric charge?
5. Does the human ear respond to ultrasonic sound?

(B) Fill up the blanks and rewrite the sentences: [5]

1. The image formed by a _____ mirror is always virtual and small in size.
2. In case of a spring balance, the extension produced in the spring is directly proportional to the _____ force acting on it.
3. Tracing paper is a _____ object.
4. _____ is the shortest length between the initial and final positions of a moving particle in a given time.
5. Woolen clothes are good heat insulators because _____ is trapped within the woolen fibres.

Question 3

(A) Match the items in column I with the appropriate items in column II. [5]

Column A	Column B
Velocity	An electrical conductor
Electrical charges move freely in it	Reflection of sound
The image is erect and the same size as the object	212°F
Echo	Plane mirror
Boiling point of water	m/s

(B) Define the following: [5]

1. Centripetal acceleration
2. Compression
3. Conductor of electricity
4. Thermal energy
5. Reflecting surface

Question 4

- (A) Identify and classify the following types of motions as oscillatory, curvilinear, multiple, random motion or uniform motion: [5]

The up and down motion of needle of the sewing machine	
A ball is thrown upwards at an angle	
Motion of an object along a straight line with constant speed	
A person drawing water from a well	
Motion of a football	

- (B) Give one word for the following [5]

1. The ratio of the density of a substance to the density of water at 4°C.
2. At infinity it gives a real, inverted and diminished image
3. Two sounds can be heard distinctly if they reach our ear at an interval of at least
4. When an object in motion has no specific path and suddenly changes its direction, the motion is said to be
5. These are based on the nuclear fusion of Uranium-235

Question 5

- (A) State whether the following statements are True or False [5]

1. A strip of glass is cut from a hollow sphere and silvered from the outer side, such that the reflecting surface appears on the inner side. The mirror is convex.
2. The reflecting surface of a spherical mirror may be curved inwards or outwards.
3. Conduction is possible in vacuum.
4. A piece of iron (density 7.6 g/cm³), floats in mercury (density 13.6 g/cm³).
5. Electric current can flow through metals.

(B)

1. Draw neat diagrams and state the characteristics of the image formed when an object is placed between the focus and the centre of curvature of a concave mirror. [3]
2. Give reasons.

The freezing chest of a refrigerator is always fitted near the top in a refrigerator. [2]

Question 6

Answer the following questions in short:

1. A stone of mass 25 g is immersed completely in water contained in a measuring cylinder. The initial level of water was 50 cm^3 and after lowering the stone it was found to be 60 cm^3 . Find the density of the stone? [2]
2. Draw the circuit diagram to represent the circuit shown in figure below: [2]



3. A cyclist travels a distance of 4 km from P to Q and then a distance of 3 km at right angle to PQ. What is the displacement of the cyclist? [2]
4. Give four uses of plane mirrors. [2]
5. List four properties of the image formed by a concave mirror when an object is placed between the focus and the pole of the mirror. [2]

Question 7

(A)

1. Describe an experiment to prove that sound cannot travel in vacuum. [4]
2. What is rectilinear propagation of light? Give examples. [3]

(B) Give three differences between concave and convex mirrors. [3]