

Science - Part test - Class X

Date: 29/8/2026

Saturday

Section-A: Physics

29/45

1.) Convex mirror $///$ ✓

2.) 4.5×10^8 m/s ✗

Wrong option. Correct: (c) 2×10^8 m/s

0/1

3.) Both (A) and (R) are true, and (R) is the correct explanation of (A) ✓ $///$

4.) Laws of Reflection of light:

i.) First law: The angle of incidence ($\angle i$) is always equal to the angle of reflection ($\angle r$)
 $\angle i = \angle r$ ✓

ii.) Second law: The incident ray, the reflected ray and the normal to the mirror at the point of incidence all lie in same plane. ✓

2/2

5.)

6.) Height of the object (h_o) = +4 cm

Object distance (u) = -25 cm

✓ Focal length of concave mirror (f) = -15 cm

Image Distance (v)

Using Mirror Formula:

$$\frac{1}{f} = \frac{1}{v} + \frac{1}{u} \quad \checkmark$$

for $\frac{1}{v}$:

$$\frac{1}{v} = \frac{1}{f} - \frac{1}{u}$$

Substituting:

$$\frac{1}{v} = \frac{1}{15} - \frac{1}{-25} = \frac{1}{15} + \frac{1}{25}$$

Common denominator (75)

$$\frac{1}{v} = \frac{-5+3}{75} = \frac{-2}{75}$$

$$v = \frac{-75}{2} = -37.5 \text{ cm} \quad \checkmark$$

$$h_i = -1.5 \times 4 = -6 \text{ cm} \quad \checkmark$$

2/3

Sign error in substitution; nature of image not stated.

7.) i.) Concave mirror

ii.) The outer surface acts like a convex mirror. $\checkmark$

Light rays reflecting off a convex surface diverge ~~and~~ outward, causing the extended reflected rays to intersect behind the mirror.

iv.) Refraction of light ✓

v.) The speed of light decreases
(slows down) ✓

4/4

Section - B : Chemistry

8.) A dazzling white flame is observed; and a white powder of MgO is formed ✓

1/1

9.) Silver metal by decomposition ✓

1/1

10.) (A) is false but (R) is true

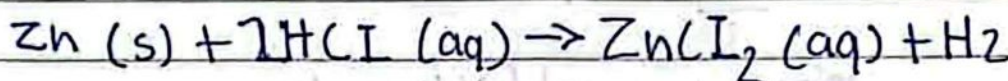
✗

0/1

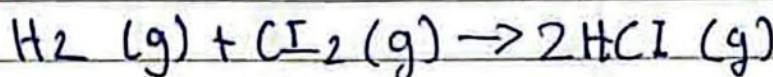
Wrong option. Correct: (a)

11.) i.) Observation: Evolution of a gas
(effervescence of hydrogen gas bubbles) or
rise in temperature (The container becomes
warm) ✓

ii.) Chemical equation:



Balanced equation:



2/2

12.) i.) * Emission of reddish-brown fumes
of nitrogen dioxide (NO_2) gas ✓

* A yellow residue of lead monoxide

(PbO) remains in the boiling tube ✓

ii.) Thermal decomposition reaction ✓

iii.) Reactant: Lead nitrate

✗ Nitrogen dioxide (gas) and Oxygen 2/3

Balanced chemical equation not written.

13.) a.) $\text{N}_2 (\text{g}) + 3\text{H}_2 (\text{g}) \rightarrow 2\text{NH}_3 (\text{g})$ ✓

✓ b.) $2\text{H}_2\text{S} (\text{g}) + 3\text{O}_2 (\text{g}) \rightarrow 2\text{H}_2\text{O} (\text{l}) + 2\text{SO}_2 (\text{g})$ 4/4

14.) i.) Slaked lime ✓

$\text{Ca} (\text{OH})_2$

✓ ii.) Reason: The reaction between quicklime (CaO) and water releases a large amount of heat energy

Exothermic reaction ✓

iii.) Silver bromide ✓

3/3

Section-C: Biology

15.) Hydrochloric acid ✓ 1/1

16.) Salivary amylase ✓ 1/1

✓ 17.) Both (A) and (R) are true and (R) is the correct explanation of (A) 1/1

✓ 18.) a.) Role: Potassium hydroxide (KOH) acts as a carbon dioxide (CO_2) absorber. ✓

b.) Conclusion: Carbon dioxide (CO_2) is essential for photosynthesis because CO_2 was unavailable. ✓

Good.

2/2 ✓

19.)

Autotrophic

Heterotrophic

Definition

Mode of nutrition in which organisms synthesize their own food from simple inorganic raw materials CO_2 and H_2O

Mode of nutrition in which organisms cannot prepare their own food and depend on other organism for nourishment. ✓

1/2

No mechanisms or examples given for either type.