Chapter End Test

Date : _____ Duration: 40 Min. Max. Marks : 25	Science **Topic :** Light-Chemical Reaction and Equations	Class X

General instruction:
1. This question paper consists of two sections.
2. Section A consists of 15 & Section B consists 10 marks.
3. The answer of MCQs has to done in separate OMR sheet.
4. Subjective section has 6 questions of 1, 2 & 3 marks.
5. Subjective questions have to be answered separately in answer sheets.
5. All questions are compulsory.

Section – A

1. Choose the wrong statement.

(a) A concave mirror can form a magnified real image.

(b) A concave mirror can form a magnified virtual image.

(c) A convex mirror can form a diminished virtual image.

(d) A convex mirror can form a diminished real image.

2. A virtual image larger than the object can be produced

(a) Plane mirror (b) Concave lens

(c) Convex mirror (d) Concave mirror

3. Which of the following is a chemical change:

(a) Boiling of water to give water vapours (b) Melting of ice to give water

(c) Combustion of LPG. (d) Dissolution of salt in water.

4. A virtual image three times the size of object is obtained with a concave mirror of radius of curvature 36 cm. The distance of the object from the mirror is

(a) 20 cm (b) 10 cm

(c) 18 cm (d) 5 cm

5. Which one is correct statement about the reaction?

$Fe(s) + CuSO_4 (aq) \rightarrow Fe SO_4 (aq) + Cu(s)$?

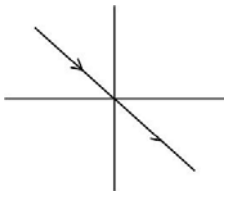
(a) It is a single displacement reaction

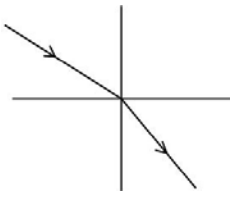
(b) It is a redox reaction.

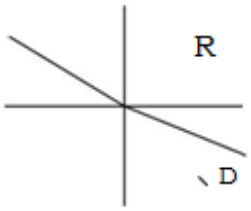
(c) In this reaction, Fe is oxidised and Cu^+ is reduced.

(d) Each one.

6. Which of the following shows the bending of light from rarer (R) into denser (D) medium?

(a) 

(b) 



(c) (d) none of these

7. How will the image by a convex lens be affected if the upper half of the lens is wrapped with a black paper?

(a) The size of the image is reduced to one-half
(b) The upper half of the image will be absent
(c) The brightness of the image is reduced
(d) There will be no effect

8. Which of the following lenses, would you prefer to use while reading and small letters found in a dictionary?

(a) A convex lens of focal length 50 cm (b) A concave lens of focal length 50 cm
(c) A concave lens of focal length 50 cm (d) A convex lens of focal length 5 cm

9. The equation

$Cu + xHNO_3 \dashrightarrow Cu(NO_3)_2 + yNO_2 + 2H_2O$

The values of x and y are

(a) 3 and 5 (b) 8 and 6
(c) 4 and 2 (d) 7 and 1

10. Power of a convex lens of focal length 50 cm is

(a) –2 D (b) –0.5D
(c) +2 D (d) +0.5D

11. The sign of the power of a convex lens is

(a) Negative
(b) Positive
(c) Positive if focal length is small
(d) Positive or negative depending on the focal length of the lens

12. Zn^{2+} (aq) + 2e → Zn(s). This is

(a) Oxidation reaction (b) Reduction reaction
(c) Redox reaction (d) None of these

13. A dilute solution of sodium carbonate was added to two test tubes one containing dilute HCI (X) and the other containing dilute NaOH (Y). The correct observation was:-

(a) A brown colored gas liberated in test tube X
(b) A brown colored gas liberated in test tube Y
(c) A colorless gas liberated in test tube X
(d) A colorless gas liberated in test tube Y

14. Two thin lenses of power +3.5 D and –2.5 D are placed in contact, then the power and focal length of the lens combination is

(a) + 1D, + 100 cm (b) +2D, + 150cm

(c) + 1D, + 200 cm (d) + 2 D, + 100 + 2 D, + 100 cm

15. An object is placed at a distance of 4 cm from a concave lens focal length 12 cm. The magnification of image is

(a) 1. 5 (b) 0.65

(c) 0.55 (d) 0.45

Section – B

1. Name the various types of beams of light. **[1]**

2. Define Aperture of a mirror. **[1]**

3. Why do we need to balance all chemical equations? **[1]**

4. In the reaction represented by following equation **[2]**

$CuO\ (s) + H_2\ (g) \rightarrow Cu(s) + H_2O(l)$

(a) Name the substance oxidized. (b) Name the substance reduced.

(c) Name the oxidizing agent. (d) Name the reducing agent.

5. An object is placed in front of a concave lens of focal length 20 cm. Magnification is found to be ½. Find the location of the object. **[2]**

6. (a) Write two differences between real image and virtual image.

(b) Discuss the nature of image formed, when the object moves from infinity towards concave mirror.

(c) Can a concave mirror form a virtual image of same size as the object? **[3]**

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Hints / Solutions to Chapter End Test

Date : _____ Duration: 40 Min. Max. Marks : 25	Science Topic : Light-Chemical Reaction and Equations	Class X

Section – A

1.	(d)	**2.**	(d)	**3.**	(c)	**4.**	(c)	**5.**	(a)
6.	(b)	**7.**	(c)	**8.**	(d)	**9.**	(c)	**10.**	(c)
11.	(b)	**12.**	(b)	**13.**	(c)	**14.**	(a)	**15.**	(a)

Section – B

1. Three types of beams of light are:

Parallel beam

Converging beam

Diverging beam

2. The effective width of a spherical mirror from which reflection can take place is called its aperture.

3. The chemical equation needs to be balanced so that it follows the law of conservation of mass. A balanced chemical equation occurs when the number of the different atoms of elements in the reactants side is equal to that of the products side.

4. In the reaction

$CuO\ (s) + H_2\ (g) \rightarrow Cu(s) + H_2O\ (g)$

(a) Oxidised substance H_2 (b) Reduced substance Cu

(c) Oxidising agent CuO (d) Reducing agent H_2

5. Given, f = -20 cm

m = ½ find u = ?

$m = 1/2 = v/u$

$u = 2v$

$1/f = 1/v - 1/u$

$= 1/v - 1/2v = 2 - 1/2v = 1/2v$

$1/-20 = 1/v$

$v = -10$ cm

$u = -5$ cm

6. (a) **Real image:**

(i) Real image is always inverted

(ii) Real image can be obtained on screen.

Virtual image:

(i) Virtual image cannot be projected onto a screen

(ii) Virtual image is always upright

(b) Nature of the image will be Real, inverted and point sized.

(c) No. Virtual image formed by a concave mirror is always enlarged.

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