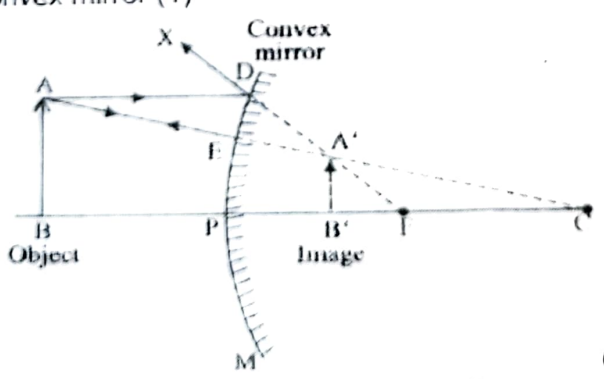
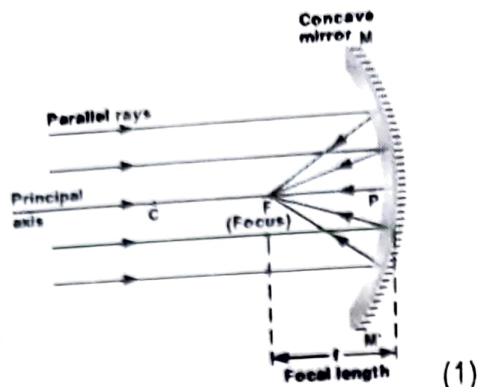


Marking Scheme
Half Yearly Examination
Class X
Session 2023-24

1	b) ii) and iii)	1
2	b) Yellow precipitate was formed	1
3	a) Magnesium Oxide	1
4	b) $\text{SO}_2 + \text{SO}_3$	1
5	d) Calcium oxide which is basic.	1
6	d) Milk of Magnesia, Blood, gastric juice	1
7	a) Washing soda	1
8	(b) Pituitary gland	1
9	(c) Cerebellum	1
10	(a) Absorption of water	1
11	(a) Urea and excess salts.	1
12	(c) Only I	1
13	(b) 0 degree	1
14	(b) ii	1
15	(c) Guard cell, stomatal pore, Chloroplast	1
16	(d) Pancreas	1
17	b) Both A and R are true but R is not the correct explanation of A.	1
18	(a) Both assertion and Reason are correct and reason is the correct explanation of Assertion.	1
19	Both Assertion and Reason are true and reason is the correct explanation of assertion	1

20	(c) A is true but R is false.	1
21	The color of the silver chloride turns to grey. (1) The following change can be represented by the chemical reactions as: $2 \text{AgCl} (s) \xrightarrow{\text{sunlight}} 2\text{Ag} (s) + \text{Cl}_2 (g)$. (1)	2
22	Iodised salt contains Iodine which is necessary for the thyroid gland to synthesise thyroxine hormone. (1) Thyroxine regulates carbohydrate, protein and fat metabolism in the body to provide growth hormone. Its deficiency causes goitre. (1)	2
23	Quantity of dissolved Oxygen is fairly low in water as compared to the amount of Oxygen in air (1). Aquatic organisms therefore have to breathe faster than terrestrial organisms to absorb the required amount of Oxygen from the water. (1) OR Ans. (a) The walls of ventricles are thicker than the auricles because ventricles have to pump the blood to all the parts of the body during contraction. To counteract the backward pressure exerted by the blood, the walls of the ventricles have to be thicker to avoid bursting of heart. (1) (b) The walls of trachea do not collapse when there is less air in it because it is supported by rings of cartilage tissue. (1)	2
24	Convex mirror (1)  OR (1)	2



Any two uses (0.5+0.5)

25

- (a) The statement made by the student is incorrect. Positions marked 3 (yellow) and 5 (blue) are similar to the colour of gold metal and the colour of the sky respectively. The student is stating the nature of colours in reverse order. (1)
- (b) (i) The position marked 7 corresponds closely to the colour of a brinjal. (0.5)
- (ii) The position marked 1 (red) corresponds closely to the colour of 'danger' or stop signal lights. (0.5)

2

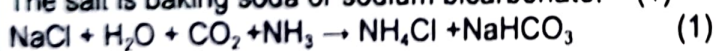
26

1- Glomerulus 2—Renal Arteriole 3—Proximal convulated tubule
4—Collecting Duct.

2

27

The salt is baking soda or sodium bicarbonate. (1)



The uses are: (½ x2)

For making baking powder
Is an ingredient of antacid
Used in soda acid fire extinguisher.

OR

- a) When baking soda is added to milk, it increases the pH of the milk as it is alkaline in nature. Owing to this reason, the acid produced by bacteria for the curd formation is used up in neutralizing the alkalinity first. Due to this reason, milk in which baking soda is added, takes a longer time to set as curd.
- b) While diluting an acid, it is preferred that the acid is added to water rather than the water being added to the acid. Adding water to a

3

concentrated acid releases a large amount of heat, which can cause an explosion and acid burns on the skin, clothing, and other body parts.

- c) Copper sulphate is a blue coloured chemical. When it is heated, the blue colour disappears and it turns white due to loss of water of crystallisation.

28

- (a) Combination reaction (½)
(b) $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2$, Calcium hydroxide. (1,½)
(c) i) Hissing sound is produced. (½ X2)
ii) Heat is evolved

3

29

ANS.

3

Reflex Action	Walking
1. It is a spontaneous, involuntary response to a stimulus.	1. It is a voluntary response to a stimulus.
2. It is controlled by spinal cord.	2. It is controlled by brain.
3. This kind of response occur within the fraction of second.	3. This kind of response takes longer time.

30

The human brain has three main parts. These are
Cerebrum: higher faculties like thinking
Cerebellum : body posture and balance
Medulla oblongata: heart beat and breathing
OR
Fore brain : higher faculties
Midbrain : Connects the forebrain and hind brain/ regulates eye movements
Hindbrain: involuntary actions like breathing/respiration/swallowing/sneezing

3

31

Q31. $P = 4D$
 $f = \frac{100}{P} = \frac{100}{4} = 25 \text{ cm} \quad (1)$
 $u = -50 \text{ cm}$
 $v = ?$
 $f = +25 \text{ cm}$
 $\frac{1}{f} = \frac{1}{v} - \frac{1}{u} \quad (1/2)$
 $\frac{1}{25} = \frac{1}{v} - \frac{1}{-50}$
 $\frac{1}{25} = \frac{1}{v} + \frac{1}{50}$
 $\frac{1}{v} = \frac{1}{25} - \frac{1}{50} = \frac{2-1}{50}$
 $v = +50 \text{ cm} \quad (1/2)$
 $m = \frac{v}{u} = \frac{50}{-50} = -1 \quad (1/2 + 1/2)$

OR

Q31. Choice
 $h_1 = 2 \text{ cm}$
 $u = -20 \text{ cm}$
 $f = -15 \text{ cm}$
 $v = ?$
 $\frac{1}{f} = \frac{1}{v} + \frac{1}{u}$
 $\frac{1}{-15} = \frac{1}{v} + \frac{1}{-20}$
 $\frac{1}{-15} = \frac{1}{v} - \frac{1}{20}$
 $\frac{1}{v} = \frac{1}{-15} + \frac{1}{20} = \frac{-2+1}{30}$
 $v = -30 \text{ cm} \quad (1/2)$
 $\frac{h_2}{h_1} = -\frac{v}{u}$
 $\Rightarrow \frac{h_2}{2} = -\left(\frac{-30}{-20}\right)$
 $\Rightarrow h_2 = -2 \text{ cm} \quad (1)$
 Real, inverted same size. (1/2)

3

32

- (a) Myopia(0.5)
 (d) Causes - (i) High converging power of eye lens (ii) Elongation of eye ball (1)
 (e) Concave lens (0.5)
 (f) Ray diagram (1)

3

33

- (a) Due to scattering of light by particles of fog or smoke also known as tyndall's effect (1)
 (b) Red has highest wavelength so it is least effected by fog or smoke Hence it can be seen from a distance (1)
 (c) There is no atmosphere to scatter light (1)

3

34.

- a) Electrolysis of water
 b) Graphite
 c) $2\text{H}_2\text{O} \rightarrow 2\text{H}_2 + \text{O}_2$
 d) For ionisation
 e) 2:1

(1x5)

OR

- a) $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + \text{NaCl}$
- b) Double displacement
- c) BaSO_4
- d) White ppt
- e) NaCl

(1x5)

35.

5

Inhalation	Exhalation
1. The diaphragm contracts and is pulled down and flattened.	1. The diaphragm relaxes and is pushed back to its original position.
2. Volume of the thorax increases	2. Volume of the thorax decreases.
Or any other valid point of difference.	

(b) Liver : secretes bile juice for emulsification of fat globules into small droplets.

Pancreas: produces enzymes for the complete digestion of proteins and starch.

(c) the organ which performs the following functions are:

(i) Absorption of digested food-- Small intestine

(ii) Absorption of water—large intestine.

ORANS. (i) A—Dendrite (B) ---Axon

(ii) The information in the neuron is acquired at the end of the dendrite tip.

(iii) The information travels from the dendrite to the cell body and then along the axon to its end.

(iv) The information travels in the form of an impulse.

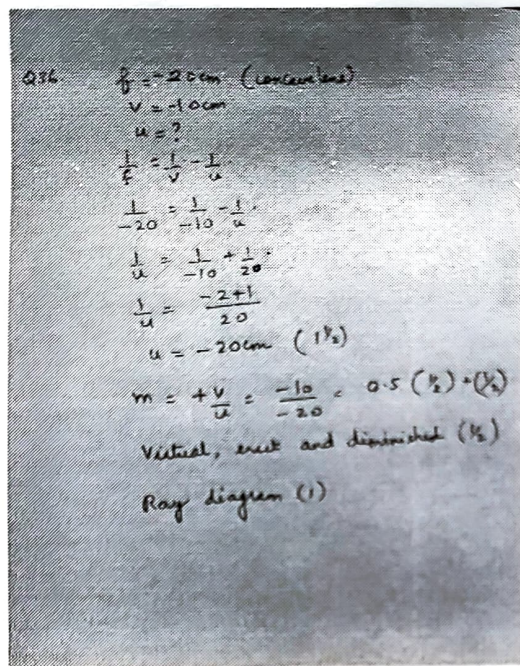
The impulse is converted into a chemical signal at the synapse/ end of the axon.

36

- (a) Slowest in diamond and fastest in water
 (b) Diamond because it has highest refractive index
 (c) Ray diagram showing light passing from denser to rarer medium
 (d) $n_{21} = \frac{\sin i}{\sin r}$ where n_{21} is the refractive index of II medium wrt to I medium
 (e) $n_b = \frac{n_b}{n_k} = \frac{1.50}{1.44} = 1.04$ (1 mark for each part)

OR

Definition = 1 mark



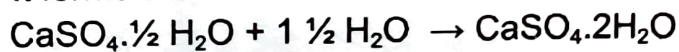
5

37

- a) To avoid the formation of gypsum on reacting with moisture present in atmosphere. (1)
 b) $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$, Calcium sulphate hemihydrate. ($\frac{1}{2} \times 2$)
 c) By heating gypsum at 373K (1)
 $\text{CaSO}_4 \cdot 2\text{H}_2\text{O} \rightarrow \text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O} + 1 \frac{1}{2} \text{H}_2\text{O}$ (1)

OR

It forms a hard solid mass.



4

38

- a) Heart is the target organ for the adrenaline hormone which increases the heartbeat rate.
 b) Thyroxine is released by thyroid gland.
 c) It regulates carbohydrate, protein and fat metabolism in the body and promote the best balance for growth.

OR

c)

4

39

- (a) L1 and L2 are both convex lenses (1)
 (b) M is negative and greater than 1 for real inverted and magnified image (1)

4

(c) Between $2F$ and F (1 mark) For correct ray diagram 1 mark

Choice part

Focal length ratio = $1:4$ with calculations 2 marks