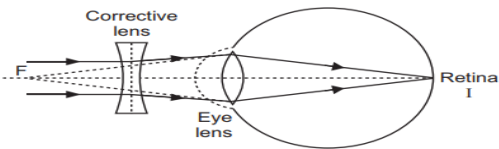
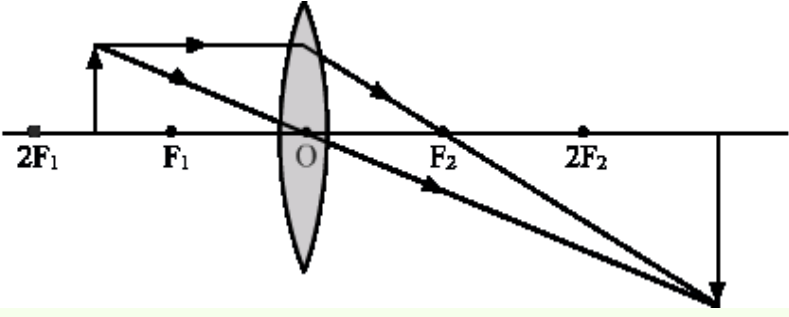


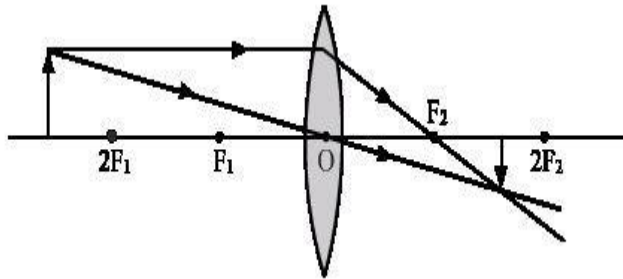
INDIAN SCHOOL AL WADI AL KABIR

CLASS X MIDTERM ANSWER KEY

SCIENCE (SET-1) (2022-23)

Q.No	Answers	Marks
1	30 cm in front of the mirror	1
2	c) Displacement reaction	1
3	b) mitochondria	1
4	a) Fig A	1
5	c) (i), (ii) and (iv)	1
6	d) both (b) and (c)	1
7	a)-0.5 D	1
8	d)10	1
9	(c) kidney→ ureter → urinary bladder→ urethra	1
10	a) Ciliary muscles	1
11	d) Lime	1
12	(c) Wolf, grass, snake, tiger	1
13	a) are relaxed and lens becomes thinner	1
14	b) Na	1
15	(b) multiple fission	1
16	(a) 25 cm	1
17	<p>i. Before the retina</p> <p>a b</p> <p>b. Power of accommodation is the ability of the eye lens to focus near and far objects clearly on the retina by adjusting its focal length.</p> <p>c.</p>  <p>d. The corrective lens should make the objects at infinity appear at the far point.</p> <p>∴ For object at infinity, object distance = $u = -\infty = u = -\infty$.</p> <p>For the myopic eye, far-point distance, $v = -1.5$ m.</p> $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$ $\frac{1}{-1.5} - \frac{1}{-\infty} = \frac{1}{f}$ $f = -1.5 \text{ m.}$ <p>Power, $P = \frac{1}{f(\text{in m})} = \frac{1}{-1.5} = -0.67\text{D}$</p>	<p>1</p> <p>1</p> <p>1</p> <p>2</p>
18	<p>a. White to grey</p> <p>ii. $2\text{AgCl}_{(s)} \xrightarrow{\text{Sunlight}} 2\text{Ag}_{(s)} + \text{Cl}_{2(g)}$</p> <p style="text-align: center;">Silver chloride Silver Chlorine</p> <p>C.Black and white photography</p>	<p>1</p> <p>1</p> <p>1</p>

	<p>$\text{NaCl} + \text{H}_2\text{O} + \text{CO}_2 + \text{NH}_3 \rightarrow \text{NH}_4\text{Cl} + \text{NaHCO}_3$</p> <p>Uses of Baking Soda :</p> <p>(i) It is used in fire extinguisher.</p> <p>(ii) It is also used as ingredient of antacid.</p>	
25	<p>(a) Chlorofluorocarbons or CFCs are the main cause of ozone layer depletion.</p> <p>(b) Any two differences between biodegradable and non-biodegradable wastes</p> <p style="text-align: center;">OR</p> <p>Any grassland food chain showing three trophic levels correctly Grass → Deer → Lion The amount of energy available to the third trophic level is 100J</p>	<p>(1)</p> <p>(1+1)</p> <p>(1+2=3 marks)</p> <p>(1)</p> <p>(2)</p> <p>(1+2=3 marks)</p>
26	<p>(a) The binary fission in amoeba different as it can divide from any plane as it has no shape whereas Leishmania divides from a definite longitudinal plane as its shape is fixed.</p> <p>(b) Correct definition Example Spirogyra</p>	<p>(2 marks)</p> <p>(½ mark)</p> <p>(½ mark)</p> <p>(2+½ x2=3 marks)</p>
27	<p>(a) He should use a convex lens as it forms real images.</p> <p>(b) He should place the candle flame between F and 2F (the focus and centre of curvature of the lens) to get the magnified image on the wall while the diminished image is obtained when the object is located at a distance greater than 2F.</p> <p>(c) The ray diagram for the formation of the magnified image is shown below:</p>  <p>The ray diagram for the formation of the diminished image is shown below</p>	<p>1</p> <p>2</p>



2

OR

- a) The point on a lens through which a ray of light passes without deviation is called the optical centre of the lens.
 The line passing through the optical centre and centres of curvature of the faces of a lens.
 The point where a beam parallel to the principal axis appears to diverge converges from a point on the principal axis after passing through the lens.

1

1

1

$f = 12\text{cm}$, Image distance, $v = 48\text{ cm}$

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

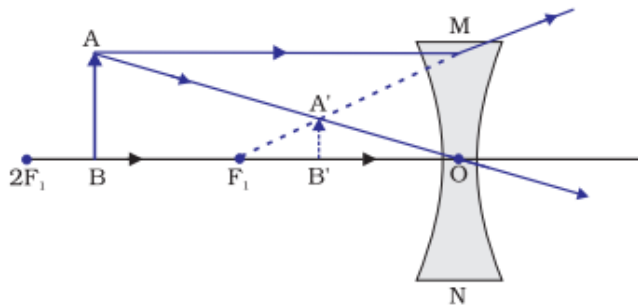
$$\Rightarrow \frac{1}{12} = \frac{1}{48} - \frac{1}{u}$$

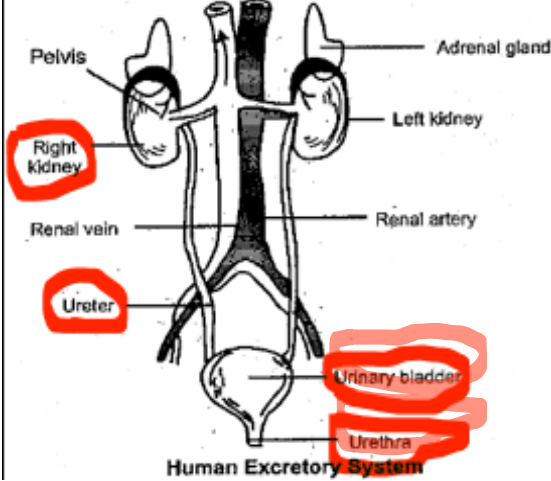
$$\Rightarrow \frac{1}{u} = \frac{1}{48} - \frac{1}{12}$$

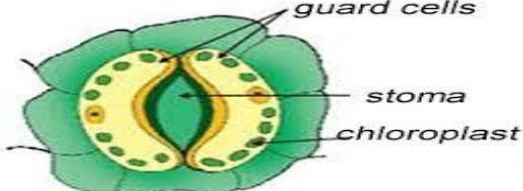
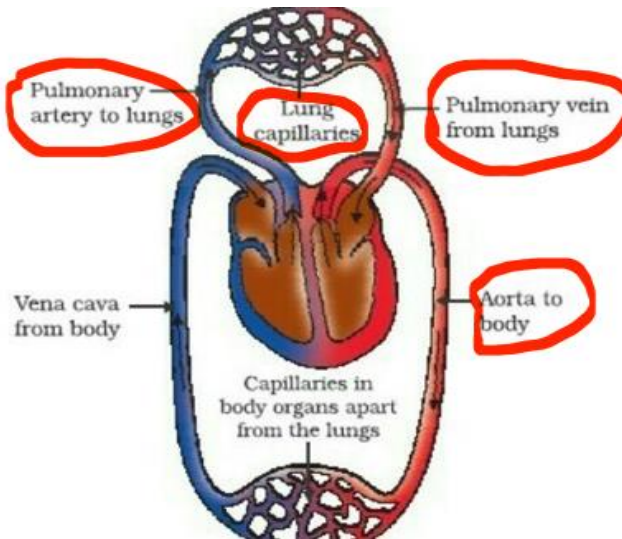
$$\Rightarrow \frac{1}{u} = \frac{1 - 4}{48}$$

$$\Rightarrow \frac{1}{u} = \frac{-1}{16}$$

$$\Rightarrow u = -16\text{ cm}$$

28	<p>We know,</p> $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$ $\Rightarrow \frac{1}{u} = \frac{1}{v} - \frac{1}{f}$ $\Rightarrow \frac{1}{u} = \frac{1}{-15} - \frac{1}{-20} = -\frac{1}{60}$ $\Rightarrow u = -60\text{cm}$ <p>Also, magnification, m can be calculated as:</p> $\frac{v}{u} = \frac{h_i}{h_0}$ $\Rightarrow h_i = \frac{v}{u} \times h_0$ $\Rightarrow h_i = \frac{-15}{-60} \times 6 = 1.5\text{cm}$ 	
29	<p>a)Plaster of paris is $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$. It is prepared by heating gypsum at 373K</p> $\text{CaSO}_4 \cdot 2\text{H}_2\text{O} \rightarrow \text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O} + 1 \frac{1}{2} \text{H}_2\text{O} \text{ (tem-373K)}$ <p>Uses:</p> <ul style="list-style-type: none"> • It is used for manufacture of statues • It is used for filling gaps before white washing <p>b) Sodium hydroxide (NaOH) is the base and hydrogen carbonate (H_2CO_3) is the acid which forms sodium hydrogen carbonate (NaHCO_3).</p> <p>Basic in nature</p>	(1+1+1+2)
30	<p>Take some metals like Ca, Mg and Fe etc. Place separately small pieces of these metals in beakers with small amount of water in them. If the metals react with the cold water, then the reaction is vigorous. If metal does not react with cold water, then treat it with hot water. Record the observations and arrange the metals in decreasing order of reactivity.</p>	(3+2)

	<p>Fe < Mg < Ca</p> <p>Reaction with Iron $3 \text{Fe} + 4 \text{H}_2\text{O} \rightleftharpoons \text{Fe}_3\text{O}_4 + 4\text{H}_2\uparrow$</p> <p>Reaction with Magnesium $\text{Mg} + \text{H}_2\text{O} \rightarrow \text{MgO} + \text{H}_2\uparrow$</p> <p>Reaction with Calcium $\text{Ca} + 2\text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2 + \text{H}_2$</p> <p>OR</p> <p>a) The oxides which behave as both acidic and basic oxides are called amphoteric oxides. Examples- aluminium oxide (Al₂O₃), zinc oxide (ZnO).</p> <p>b) When zinc is introduced to an iron sulphate solution, the colour of the iron sulphate solution (greenish) changes. Since zinc is more reactive than iron, it displaces iron from its iron sulphate solution, resulting in a grey precipitate of iron and a colourless zinc sulphate solution.</p> <p>The chemical equation of the reaction, $\text{Zn} + \text{FeSO}_4 \rightarrow \text{ZnSO}_4 + \text{Fe}$</p>	
31	<p>(a) Excretory System diagram</p>  <p>Correct diagram Half a mark for each correct label</p> <p>(b) Any four correct methods of excretion in plants (half a mark for each point)</p> <p>OR</p>	<p>(1 mark) (½X4=2 mark) (½X4=2 mark) (1+2+2=5marks)</p>

	 <p>(a) Half a mark for correct diagram Half a mark for each label any three</p> <ol style="list-style-type: none"> 1. It helps in the transpiration of water, i.e., the loss of excess water from the plant. 2. Loss of water from the stomata creates an upward pull, i.e., suction pull, which helps in absorption of water from the roots. 3. They help in exchange for gases (any two) <p>(b) Raw materials water, carbon dioxide, sunlight & chlorophyll Correct complete chemical equation</p>	<p>$\frac{1}{2}$ $\frac{1}{2} \times 3 = 1\frac{1}{2}$ $\frac{1}{2} \times 2 = 1$</p> <p>1 mark 1 mark $(\frac{1}{2} + 1\frac{1}{2} + 1 + 1 + 1 = 5$ marks</p>
32	 <p>(a)</p> <p>Correct diagram Half a mark for each correct label</p> <p>(b) so that <i>their circulatory system is more efficient and can maintain their constant body temperature.</i></p>	<p>(1 mark) $(\frac{1}{2} \times 4 = 2$marks) (2 marks) $(1 + 2 = 2 = 5$marks)</p>