Indian School Al Wadi Al Kabir
Mid-term Examination (2025-2026)
Marking scheme
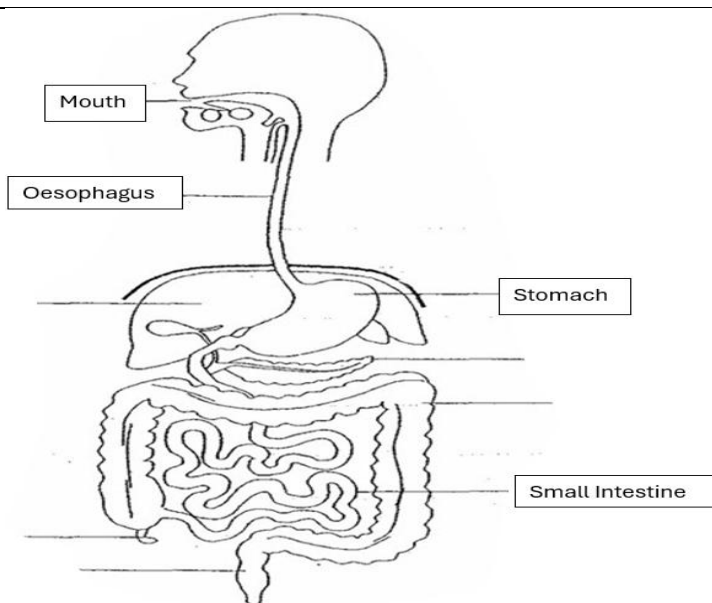
Class: X   Subject: SCIENCE (086)   Max. marks: 80
Date: 21/09/2025   Set- II-MS   Time: 3hours

| Section – A		MARKS
1	B. Yeast, mushroom, bread mould	1
2	D. Nostrils → pharynx → larynx → trachea → alveoli	1
3	A. Valves in heart	1
4	D. nephrons	1
5	A. Gustatory receptors detect taste while olfactory receptors detect smell	1
6	D. axonal end of one neuron to dendritic end of another neuron	1
7	B. cerebellum	1
8	C. A is true, but R is false.	1
9	A. Both A and R are true, and R is the correct explanation of A.	1
10	A – Sensory neuron, B – Spinal cord, C – Motor neuron, D – Effector = Muscle in arm (½ mark for each label)	2
11	A (i) Photosynthesis (ii) Autotrophs (iii) Chloroplast (iv) Guard cells (½ mark for each = ½ X 4 = 2) **OR** <table><tr><th></th><th>Artery</th><th>Vein</th></tr><tr><td>1</td><td>Presence of thick elastic, muscular walls with narrow lumen.</td><td>Have thin, non-elastic walls with wide lumen.</td></tr><tr><td>2</td><td>Blood flows in high pressure.</td><td>Blood flows in low pressure.</td></tr><tr><td>3</td><td>Serve to carry oxygenated blood from heart to other body parts (except pulmonary artery).</td><td>Serve to carry deoxygenated blood from all body parts to heart (except pulmonary veins).</td></tr><tr><td>4</td><td>Valves are absent.</td><td>Presence of valves prevents backflow of blood.</td></tr></table>**(Any two differences, (1+1 = 2)**	2
12	(i) Pituitary (ii) Pancreas (iii) Adrenal gland	2

	(iv) Testes (½ mark for each = ½ X 4 = 2)	
13	Because it goes through the heart twice during each cycle, it is known as double circulation. (1mark) Such separation allows a highly efficient supply of oxygen to the body. This is useful in animals that have high energy needs, such as birds and mammals, which constantly use energy to maintain their body temperature. (2 marks)	3
14	Plant hormones are chemical messengers produced by plants to regulate growth, development, and response to environmental stimuli. (1mark) Auxin is a plant growth hormone. When the tip of the tendril touches a support. Then the auxins present on its tip moves to the side of tip which is away from the support. So, due to more auxins in its tendrils away from the support grows faster. (2 marks)	3
15	A. When secreted in large amounts it speeds up the heartbeat and hence supplies more oxygen to the muscles. The breathing rate also increases due to contractions of diaphragm and rib muscles. It also increases the blood pressure. All these responses enable the body to deal with any stress or emergency. (2 marks) OR B. Nerve impulses can only reach limited tissues, but adrenaline, being a chemical signal, is carried in the blood and reaches all cells of the body. This ensures wide-ranging changes that prepare multiple tissues for action. (2 marks) C. Fight or Flight (Fighting or running away). (1 mark) D. Our body has one pair of adrenal glands, one above of each kidney. (1 mark)	4
16	(i)	5

(1 mark for correct diagram, ½ mark for each label ½ X4=2m)
(ii) The small intestine is longer in herbivores than in carnivores because herbivores consume plant and grass-based food which is full of cellulose and the digestion of cellulose takes a long time. (2 m)
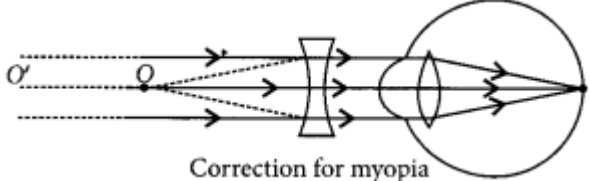
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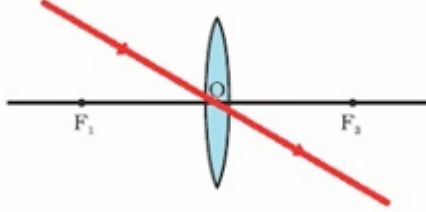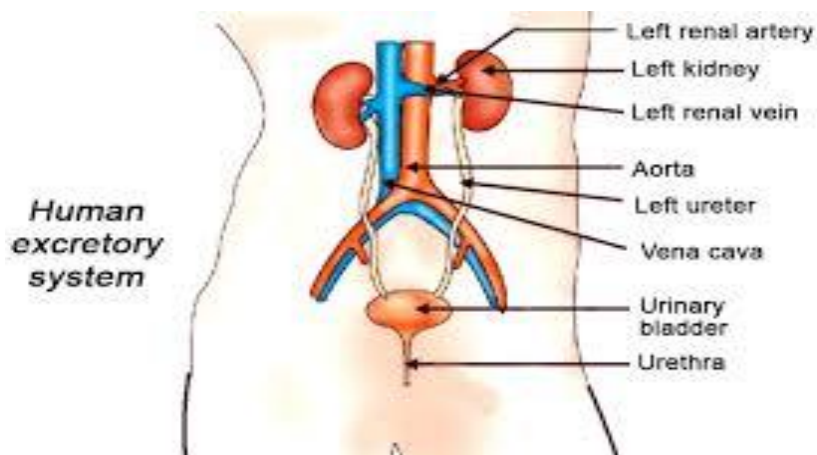

(1 mark for correct diagram, ½ mark for each label ½ X4=2m)
(ii) The amount of water reabsorbed depends on how much excess water there is in the body, and on how much of dissolved waste there is to be excreted. (2 m)

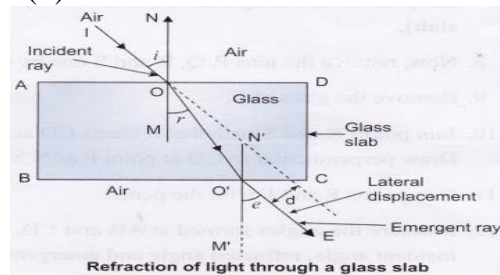|	Section – B	
17	B. 2: 1 by volume	1
18	C. Dissolution of ammonium chloride in water	1
19	C. Absorb moisture from the gas	1

20	B. Copper carbonate	1
21	D. Magnesium is below calcium but above aluminium	1
22	D. Salt of a strong acid and a strong base - CH3COONa	1
23	B. Iodine	1
24	D. A is false, but R is true	1
25	A. 'X' is Quicklime (Calcium Oxide - CaO) 　'Y' is Slaked Lime (Calcium Hydroxide - Ca (OH)$_2$) B. CaO (s)+H$_2$O (l)$\rightarrow$Ca (OH)$_2$(aq)+Heat	1 1
26	**Attempt either option A or B.** **A.** 　(i)　The black substance is Copper (II) oxide (CuO) 　(ii) 2Cu + O$_2$$\rightarrow$2CuO 　(iii) The black copper oxide (CuO) can be reduced back to 　　　copper by heating it with a reducing agent like hydrogen gas 　　　or carbon (coke), or by heating strongly without air. 　　　CuO (s)+H$_2$(g)$\rightarrow$Cu (s)+H$_2$O (g) **OR** B. 　(i) Any 2 observation 　(ii) This is a thermal decomposition reaction. 　(iii) 2FeSO$_4$ $\rightarrow$Fe$_2$O$_3$+SO$_2$+SO$_3$	 1 1 1 1 1 1
27	(i) Both metal carbonates and metal hydrogen carbonates react with 　acids to produce: A salt, water and CO$_2$ (ii) 　MgCO$_3$+2HCl$\rightarrow$MgCl$_2$+CO$_2$+H$_2$O 　Mg(HCO$_3$)$_2$+2HCl$\rightarrow$MgCl$_2$+2CO$_2$+2H$_2$O (iii) Turns lime water milky	1 1 1
28	A.　White powder: Plaster of Paris 　　Chemical formula: CaSO$_4$·½H$_2$O 　　White hard solid mass: Gypsum 　　Chemical formula: CaSO$_4$·2H$_2$O B. To prevent it from hardening due to moisture, it must be stored in airtight, moisture-proof containers. **OR** 　CaSO$_4$·½H$_2$O+1 ½ H$_2$O$\rightarrow$CaSO$_4$·2H$_2$O C. (a) 100 ^{0}C	2 1 1
29	**Attempt either option A or B.** A. (a) 'X' (Washing soda) $\rightarrow$ Na$_2$CO$_3$ 　　'Y' (Baking soda) $\rightarrow$ NaHCO$_3$ (b) 2NaHCO$_3$$\rightarrow$Na$_2CO_3$+CO$_2$+H$_2$O (c) Any two uses	5

(d) Since the process produces Chlorine (Chlor) and an alkali (NaOH is a strong alkali), it's called the Chlor-alkali process.
(e) $2NaCl(aq) + 2H_2O(l) \rightarrow 2NaOH(aq) + Cl_2(g) + H_2(g)$

OR

B.
 (a) Test tube A- strong acid
 (b) H_2 gas- Test for hydrogen
 (c) $Mg + H_2SO_4 \rightarrow MgSO_4 + H_2\uparrow$
   $Mg + H_2CO_3 \rightarrow MgCO_3 + H_2\uparrow$
 (d) Lower pH value: Sulfuric acid (H_2SO_4)
   Lower H^+ ion concentration: Carbonic acid (H_2CO_3)
 (e) Sodium and Potassium – These are metals but are soft enough to be cut with a knife, unlike most metals which are hard.
   Mercury – It is a metal that is liquid at room temperature, while typically metals are solid under standard conditions.

	Section – C	
30	B. At the focus of mirror	1
31	B. $r > v$	1
32	B. Both A and R are true, and R is not the correct explanation of A.	1
33	**Power of accommodation** is the ability of the eye lens to change its focal length by adjusting its curvature through the action of ciliary muscles (1 mark) The image distance remains constant. (1 mark)	2

34	**Attempt either option A or B.**
	A.(i) 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. (0.5+0.5)
	  (ii) (a) The position marked 7 (violet) corresponds closely to the colour of a brinjal. (b) The position marked 1 (red) corresponds closely to the colour of 'danger' or stop signal lights. (0.5+0.5)
	                    OR
	B.(i) **A < B < C** (or $1.0 < 1.3 < 1.5$) (0.5 marks)
	  (ii) light will travel slowest in **Medium C**. (0.5 marks)
	    v = c/n (0.5 marks)
	    v = (3×10^8)/1.5
	v = 2×10^8 m/s (0.5 marks)
		2

35	The person is suffering from **MYOPIA**(0.5 mark)
	   1. Elongated Eyeball
	   2. Excessive Curvature of Eye Lens (0.5+0.5 mark)
	     Concave lens(0.5 mark)
		3

Correction for myopia **(1 mark)**

36	(i)a. Solar furnace- Concave mirror (0.5 mark) 　　　　b. Rear view mirror- Convex mirror (0.5 mark) (ii) Nature of the mirror- Concave mirror(0.5 mark) $m = -\dfrac{1}{5} = \dfrac{-(-18)}{u}$ gives u = -90 cm　(0.5 mark) use $\dfrac{1}{f} = \dfrac{1}{v} + \dfrac{1}{u}$　(0.5 mark) $\dfrac{1}{f} = \dfrac{1}{-18} + \dfrac{1}{-90}$ gives f = -15cm　(0.5 mark)	3
37	(i)　　Converging lens. (1 mark) **(ii)**　　The girl must have directed the ray of light along the direction of the optical centre of the lens because the ray of light passes straight through the optical centre of the lens. (1 mark) (1 mark)	3
38	A. This is because of atmospheric refraction. Atmospheric refraction refers to the bending of light as it travels through the Earth's atmosphere, which consists of layers of air with varying optical densities. (1 mark) B. 1.Twinkling of stars　　2. Advance sunrise and delayed sunset (any two phenomena) (0.5+0.5 marks) **Attempt either subpart C or D.** C. Diagram + Explanation(due to atmospheric refraction) (1+1) **OR** D. Twinkling of star (explanation) 　Planets do not twinkle(explanation) (1+1)	4
39	**Attempt either option A or B.** A. (i) Laws of refraction -Statement	5

- The normal, incident Ray and refracted ray lie at same plane.
- sini/sinr=constant (the ratio of sin of angle of incident with sin of angle of refraction is constant.(0.5 +0.5marks)
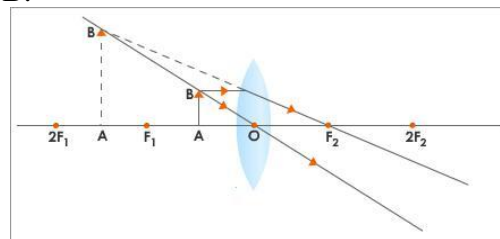
(ii)

Refraction of light through a glass slab   (2 marks)

Angle of refraction=40^0 and Angle of emergence=55^0

(0.5 +0.5marks)

(iii) 60^0 (as angle i= angle r , $30^0+30^0=60^0$) (1 mark)

OR

B.

(1 mark)

Marking -u and -v in the diagram (1 mark)

$$\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$$ (1 mark)

m=v/u

u =-20cm

m=-1

v=mu

   =20cm

1/f=1/v-1/u   (0.5 marks)

    =1/20+1/20

    =2/20=1/10

f=10cm   (0.5 marks)

P=100/f$_{(cm)}$ (0.5 marks)

=100/10=+10D   (0.5 marks)