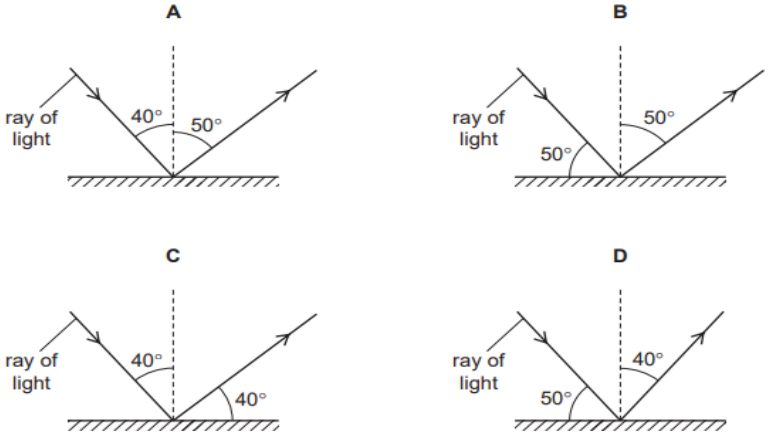
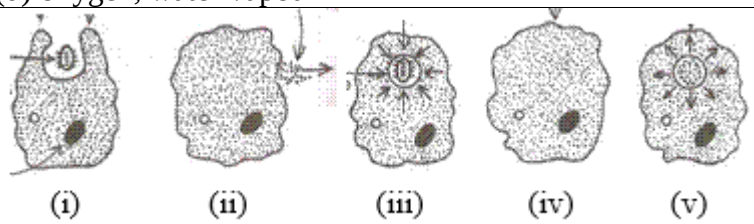
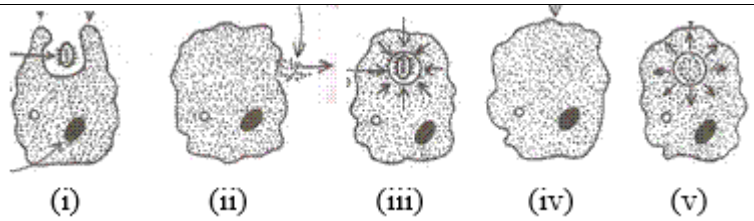
INDIAN SCHOOL AL WADI AL KABIR
DEPARTMENT OF SCIENCE 2021 - 22
CLASS 10 - PRE-MIDTERM QUESTION PAPER -2021
[QUESTIONPAPER & ANSWER KEY]

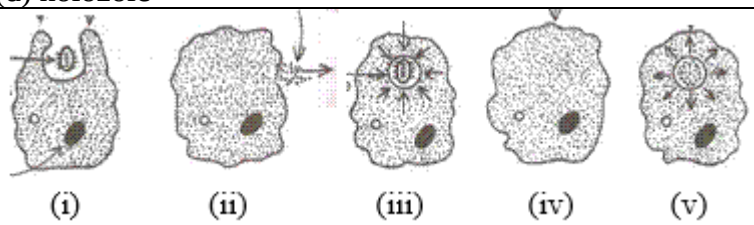
S.NO.	QUESTIONS	MARKS ALLOTTED
	PHYSICS	
1	Which diagram correctly shows a ray of light reflected by a plane mirror? 	1
2	Which of the following images can be formed by a concave mirror? I. real, inverted, and enlarged II. virtual, erect, and enlarged III. real, erect, and diminished IV. virtual, erect, and diminished (a) I and II (b) I and III (c) I, III, and IV (d) II and IV	1
	The passenger-side mirror on a car is typically a convex mirror. In some countries, these are labelled with the safety warning "Objects in mirror are closer than they appear", to warn the driver of the convex mirror's distorting effects on distance perception. Convex mirrors are preferred in vehicles because they give an upright though diminished image and because they provide a wider field of view as they are curved outwards. These mirrors are often found in the hallways of various buildings (commonly known as "hallway safety mirrors"), including hospitals, hotels, schools, stores, and apartment buildings. They are usually mounted on a wall or ceiling where hallways intersect each other, or where they make sharp turns. They are useful for people to look at any obstruction they will face on the next hallway or after the next turn. They are also used on roads, driveways, and alleys to provide safety for motorists where there is a lack of visibility, especially at curves and turns.	

	Convex mirrors are used in some automated teller machines as a simple and handy security feature, allowing the users to see what is happening behind them. Similar devices are sold to be attached to ordinary computer monitors. Convex mirrors make everything seem smaller but cover a larger area of surveillance.	
3	Which of the following statements most accurately describes rear-view mirrors? (a) Rear-view mirrors are converging such that images appear closer than their actual distance. (b) Rear-view mirrors are diverging such that the image produced is virtual, erect, and enlarged. (c)Rear-view mirrors are converging such that the image produced is real, erect, and diminished. (d) Rear-view mirrors are diverging such that the object distance is greater than the image distance.	1
4	The image in a convex mirror is always (a)real, erect and magnified (b) real, erect and diminished (c) virtual, erect and diminished (d) virtual, erect and magnified	1
5	A shop security mirror 5m from a certain object in the shop produces one tenth magnification. What is the position of the image? (a)0.5m (b)5m (c)10m (d) 25m	1
6	**Assertion:** A ray incident along normal to the mirror retraces its path. **Reason:** In reflection, angle of incidence is always greater than angle of reflection. a) Both A and R are true, and R is correct explanation of the assertion. b) Both A and R are true, but R is not the correct explanation of the assertion. c) A is true, but R is false. d) A is false, but R is true.	1
7	The point on the principal axis at which parallel rays coming from infinity converge after reflection is called the _____. (a) principal focus (b) aperture (c) principal axis (d) focal length	1
8	The focal length of a spherical mirror is equal to _____. (a) $\frac{v}{u}$	1

	(b) $\frac{uv}{u-v}$ (c) $\frac{1}{u}+\frac{1}{v}$ (d) $\frac{uv}{u+v}$	
9	Find the focal length of a convex mirror whose radius of curvature is 30 cm. (a) 60cm (b) -60cm (c) -15cm (d) 15cm	1
10	A concave mirror produces two times magnified (enlarged image) real image of an object placed at 20cm in front of it. Where is the image located? (a) at 20 cm in front of the mirror (b) at 20 cm behind the mirror (c) at 40cm in front of the mirror (d) at 40 cm behind the mirror	1
	CHEMISTRY	
11	What happens when a copper rod is dipped in iron sulphate solution? (a) Copper displaces iron (b) Blue colour of copper sulphate solution is obtained (c) No reaction takes place (d) Reaction is exothermic	1
12	In the equation x Cu $(NO_3)_2 \longrightarrow$ 2 CuO + y NO_2 + O_2 The values of x and y are- (a) 3 and 5 (b) 8 and 6 (c) 2 and 4 (d) 7 and 1	1
13	$Zn + H_2SO_4 \rightarrow ZnSO_4 + H_2$ Above reaction is - (a) decomposition reaction (b) single displacement reaction (c) combination reaction (d) double displacement	1
14	The reaction in which two compounds exchange their ions to form two new compounds is - (a) a displacement reaction (b) a decomposition reaction (c) a combination reaction (d) a double displacement reaction	1
15	**Assertion**: Calcium carbonate when heated gives calcium oxide and water. **Reason** : On heating calcium carbonate, decomposition reaction takes place.	1

<table>
<tr><td>16</td><td>The reaction of sodium sulphate and barium chloride results in the formation of white precipitate of _____.
(a) Barium sulphate
(b) Barium carbonate
(c) Sodium sulphate
(d) Sodium chloride</td><td>1</td></tr>
<tr><td>17</td><td>When an element displaces another element from its compound, a _____ reaction occurs.
(a) Double displacement
(b) Single displacement
(c) Decomposition
(d) Combination</td><td>1</td></tr>
<tr><td></td><td>The question contains statements given in two columns which have to be matched.
Statements (A, B, C, D) in column I have to be matched with statements (p, q, r, s) in column II.
<table>
<tr><td>Column I</td><td>Column II</td></tr>
<tr><td>18. $H_2 + S \longrightarrow H_2S$</td><td>(p) Single Displacement reaction</td></tr>
<tr><td>19. $Zn + 2\ HCl \longrightarrow ZnCl_2 + H_2$</td><td>(q) Double displacement reaction</td></tr>
<tr><td>20. $2\ NaOH + H_2SO_4 \longrightarrow Na_2SO_4 + H_2O$</td><td>(r)Decomposition reaction</td></tr>
<tr><td></td><td>(s) Combination reaction</td></tr>
</table></td><td>1
1
1</td></tr>
<tr><td></td><td>BIOLOGY</td><td></td></tr>
<tr><td>21</td><td>The source of oxygen liberated during photosynthesis comes from
(a) Water
(b) chlorophyll
(c) carbon dioxide
(d) glucose</td><td>1</td></tr>
<tr><td>22</td><td>Which part of alimentary canal receives bile from the liver?
(a) Stomach
(b) Small intestine
(c) Large intestine
(d) Oesophagus</td><td>1</td></tr>
<tr><td>23</td><td>The correct sequence of anaerobic respiration -
(a) glucose → pyruvate → lactic acid
(b) glucose → pyruvate → carbon dioxide + ethanol
(c) glucose → pyruvate → ADP→ lactic acid
(d) glucose → pyruvate → carbon dioxide + ethanol + energy</td><td>1</td></tr>
</table>

24	**Assertion**: Saliva contains pepsin enzyme. **Reason** : Pepsin digests protein. (a)Both A and R are true and R is the correct explanation of the assertion. (b)Both A and R are true but R is not the correct explanation of the assertion. (c)A is true but R is false. (d)A is false but R is true.	1
25	**Assertion** : The trachea does not collapse even if there is less or no air in it. **Reason** : The trachea consists of incomplete rings of cartilage. (a)Both A and R are true and R is the correct explanation of the assertion. (b)Both A and R are true but R is not the correct explanation of the assertion. (c)A is true but R is false. (d)A is false but R is true. (e) Both A and R are false	1
26	Green plants are _____ in their mode of nutrition. (a) Autotrophic (b) Heterotrophic (c) Saprotrophic (d) Parasitic	1
27	The exchange of gases in plants on the whole during the day time is release of _____ and take in of _____. (a) carbon dioxide, oxygen (b) oxygen, carbon dioxide (c) carbon dioxide, water vapour (d) oxygen, water vapour	1
28	 (i) (ii) (iii) (iv) (v) The correct sequence of the mode of nutrition in the above diagram is: - (a) (i) (ii) (iii) (iv) (v) (b) (i) (iii) (iv) (v) (ii) (c) (i) (iii) (v) (iv) (ii) (d) (i) (v) (iv) (iii) (ii)	1
29	 (i) (ii) (iii) (iv) (v) The mode of nutrition in amoeba is (a) parasitic	1

	(b) saprophytic (c) autotrophic (d) holozoic	
30	 (i) (ii) (iii) (iv) (v) The five events involved in the above-mentioned diagram are : - (a) Ingestion, egestion, digestion, absorption, assimilation (b) Ingestion, digestion, absorption, assimilation, egestion (c) Ingestion, absorption, assimilation, egestion, digestion (d) Ingestion, assimilation, egestion, digestion, absorption	1

ANSWER KEY					
1	2	3	4	5	6
d	a	d	c	a	c
7	8	9	10	11	12
a	d	d	c	c	c
13	14	15	16	17	18
b	d	d	a	b	(s) Combination reaction
19	20	21	22	23	24
(p) Single Displacement reaction	(q) Double displacement reaction	a	b	d	d
25	26	27	28	29	30
a	a	b	c	d	b