OSDAV Public School, Kaithal
2nd Unit Test (July,2024) **Set : B**
Class : X
Subject : Science

Time :1:20 hrs **M.Marks : 30**

General instructions:
All Questions are compulsory.

Q.N	Questions (Physics / Chemistry)	Marks
1	A student burnt a metal A which is found in the form of ribbon. The ribbon burnt with dazzling white flame and a substance B is formed. identify A and B	**1**
2	A concave mirror produces three times magnified real image of an object placed at 25 cm in front of it. Where is the image located?	**1**
3	A solution of sodium sulphate when mixed with barium chloride solution, an insoluble white substance is formed. Write the chemical reaction involved in it.	**1**
4	Name the mirror used in following and why a) Shaving mirror b) Rear view mirror in vehicles	**2**
5	What is absolute refractive index? Absolute refractive index of diamond is 2.42. What does this mean?	**2**
6	If the image formed by a lens of the object placed in front of it is virtual, erect and enlarged. Identify the type of the lens. Draw ray diagram in support of your answer.	2
7	Why the colour changes are observed when iron nail is dipped in copper sulphate solution. Also write the reaction involved.	**2**
8	a) Define the units of power of a lens. b)A student uses a lens of focal length 30 cm and another of -10 cm. Write the nature and power of each lens.	**3**
9	2 grams of lead nitrate crystals are heated in a dry boiling tube. a)Give two observations b)Name the type of reaction that is taking place. c) Write the balanced chemical equation for the above.	**3**
10	Corrosion is the phenomenon of deterioration of surface of metal in presence of air and moisture. It is a natural process and in the presence of a moist atmosphere, chemically active metals get corroded. This is an oxidation reaction. Rusting is the process where iron corrodes due to exposure to the atmosphere. The main circumstance of corrosion occurs with iron because it is a structural material in construction, bridges, buildings, rail transport, ships, etc. Aluminium is also an important structural metal, but even aluminium undergoes oxidation reactions. However, aluminium doesn't corrode or oxidize as rapidly as its reactivity suggests. Copper (Cu) corrodes and forms a basic green carbonate. a) What is the colour of coating formed on Iron after corrosion? b) Give two methods of prevention of corrosion. c) Identify the substance oxidised and oxidizing agent in the following reaction: $CuO + H_2 \longrightarrow Cu + H_2O$	**3**
	Biology	
11	Stomatal pores get opened during the day time for gaseous exchange. How the pores get opened?	**1**
12	Give two points of difference between: a) Xylem and Phloem b) Lipase and salivary amylase	**2**
13	Herbivores have longer small intestine than carnivores. Why?	**2**
14	Name the type of blood (oxygenated / deoxygenated) transported by each of the following mentioning the path (that is from which place to which place) a)Aorta. b) Pulmonary artery	**2**
15	Covid - 19 is a respiratory disease, which especially reaches into our lungs in respiratory tract. Now think of your respiratory tract as an upside - down tree. The trunk is your trachea or wind pipe. It splits into smaller and smaller branches in your lungs. At the end of each branch there are tiny air sacs called alveoli. a) Give the role of alveoli in your lungs. b) Why lungs always contains a residual volume of air? c) Rings of cartilage are present in trachea.Give reason.	**3**

OSDAV Public School, Kaithal

2nd Unit Test (July,2024) **Set : A**

Class : X

Subject : Science

Time :1:20 hrs **M.Marks:30**

General instructions:

All Questions are compulsory.

Q.N.	Questions (Physics / Chemistry)	Marks
1	Name and state the law which is kept in mind when we balance the chemical equations.	**1**
2	A concave mirror produces two times magnified real image of an object placed at 15 cm in front of it. Where is the image located?	**1**
3	A solution of potassium iodide when mixed with lead nitrate solution, an insoluble yellow substance is formed. Write the chemical reaction involved in it.	**1**
4	Name the mirror used in following and why a) Headlights of car. b) Rear view mirror in vehicles	**2**
5	A ray of light incident on a rectangular glass slab emerges parallel to itself. Draw labelled diagram to justify the statement.	**2**
6	If the image formed by a lens for all positions of the object placed in front of it is always virtual, erect and diminished, state the type of the lens. Draw ray diagram in support of your answer.	2
7	Respiration is an exothermic process. Justify the statement with chemical reaction.	**2**
8	a)What is meant by power of a lens? Write its SI unit. b)A student uses a lens of focal length 40 cm and another of -20 cm. Write the nature and power of each lens.	**3**
9	2 grams of ferrous sulphate crystals are heated in a dry boiling tube. a)Give two observations b)Name the type of reaction that is taking place. c) Write the balanced chemical equation for the above.	**3**
10	While burning firecrackers we experience fire with multiple colours. One of the ways to achieve this is by mixing different metal powders while manufacturing the crackers. For instance copper burns with bright green colour. let us dig deeper into this simple but enjoyable experiment with burning magnesium which can be easily performed in the lab or even at home. a) Why magnesium ribbon should be cleaned before burning in air? b) While burning the strip of magnesium ribbon what is the colour i) of flame ii)of the ash formed c)Write the balanced chemical equation of the above.	**3**
	Biology	
11	Stomatal pores get closed at night to slow down the rate of transpiration. How these pores get closed?	**1**
12	Bile juice doesn't contain any enzyme yet it is important for digestion. Justify the statement with two arguments.	**2**
13	Give two points of difference between a)Transport of water and transport of food in plants b)Pepsin and Trypsin	**2**
14	Name the type of blood (oxygenated / deoxygenated) transported by each of the following mentioning the path (that is from which place to which place) a)Vena Cava. b) Pulmonary vein	**2**
15	Terrestrial animals use lungs to breathe while aquatic animals like fish use gills to absorb dissolved oxygen in water. Frogs are the organisms that can survive both in water and on land. a) Aquatic animals have a higher breathing rate than terrestrial animals.why? b) The walls of trachea is a supported by cartilagenous rings. Give reason. c) Plants have low energy needs as compared to animals.Why?	**3**

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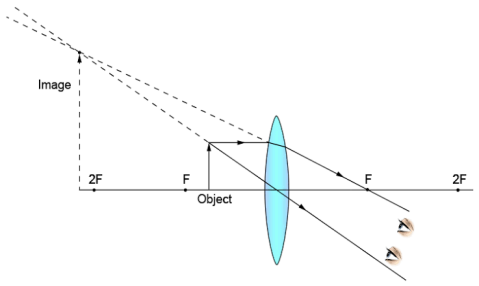
Q.No.	Questions (Physics / Chemistry)	Marks
1	A Mg and B - MgO	**1**
2	m=-v/u -3=-v/-25 v=-75cm	**1**
3	BaCl2 + Na2SO4 —-->BaSO4 + NaCl	**1**
4	a) Shaving mirror - concave to see the large image of face b) Rear view mirror in vehicles - convex to get erect and diminished image.	**2**
5	absolute refractive index= speed of light in vaccum/speed of light in medium . Speed of light in diamond is1 / 2.42 times speed of light in air.	**2**
6	Convex lens. 	2
7	Colour changes are observed because more reactive iron displaces less reactive copper from copper sulphate solution. Fe + CuSO4 —-->FeSO4 + Cu	**2**
8	a) 1D is power of lens whose focal length is 1m. b) P= 1/f P = 100/30 = 3.3D Converging P= -100/10 = -10D Diverging	**3**
9	a) colour changes from white to yellow. Brown fumes are evolved b)Thermal decomposition reaction c) 2Pb(NO3)2 + heat —--> 2PbO +4NO2 + O2	**3**
10	a) Reddish brown b) Painting, Oiling , Galvanisation c) substance oxidised - H2 oxidizing agent - CuO	**3**
	Biology	
11	Stomatal pores get opened by guard cells. Water flows in guard cells. They swell up and stomatal pores get opened.	**1**
12	a) Xylem Phloem	**2**

	1.Transport water. 1.Transport food 2.Does not requires energy 2.Requires energy b) Lipase salivary amylase 1.digest fats. 1.Digest carbohydrates 2.Release by pancreas in small intestine 2.release by salivary gland	
13	Herbivores eat grass which contains cellulose.This is difficult to digest. Where as carnivorous eat flesh which is easy to digest.	**2**
14	a)Aorta. - Oxygenated blood from left ventricle to all body parts b) Pulmonary artery - Deoxygenated blood from right ventricle to lungs.	**2**
15	a)alveoli provide large surface area for exchange of gases b) So that c) Rings of cartilage are present in trachea.Give reason.	**3**

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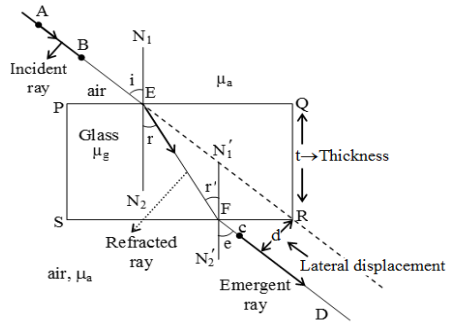
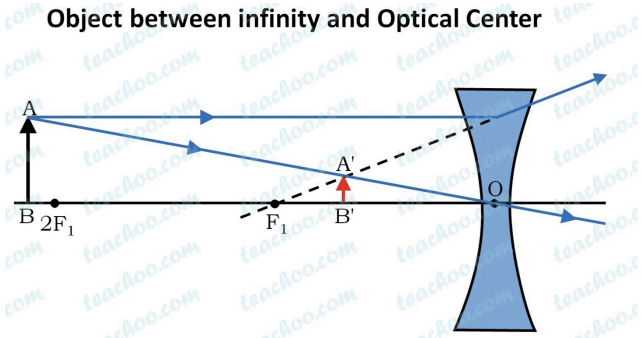
Q.No.	Questions (Physics / Chemistry)	Marks
1	Law of conservation of mass. Mass can neither be created nor be destroyed in a chemical reaction.	1
2	m=-v/u -2=-v/-15 i.e. v=30cm.	1
3	BaCl2 + Na2SO4 —-->BaSO4 + NaCl	1
4	a) concave mirror to get powerful parallel beam of light b) convex mirror as it gives virtual, erect and diminished image of vehicles. Hence cover wider field of view.	2
5		2
6	Concave lens 	2
7	Because carbohydrates after digestion produce glucose in body. This glucose reacts with oxygen to release energy. C6H12O6 + 6O2 —----> 6CO2 + 6H2O + Energy	2
8	a) abilities of lens to converge or diverge the light rays.Units - Dioptre b)P=1/f P= 100/40 = 2.5D Nature - converging P= -100/20 = -5D Nature - Diverging	3
9	a)pale green colour changes to reddish brown Suffocating, colourless gases are evolved.	3

	b)Thermal decomposition reaction. c)$2FeSO_4$ + heat —--> Fe_2O_3 + SO_2 + SO_3	
10	a) To remove the layer of magnesium oxide. b) i) of flame - White ii)of ash formed - White c)$2Mg + O_2$ —--> 2MgO	**3**
	Biology	
11	Stomatal pores get closed by guard cells. Water comes out from guard cells , they shrink and hence stomatal pores closed.	**1**
12	1.Helps in emulsification of fats. 2.Makes food medium alkaline to activate pancreatic enzymes.	**2**
13	a)Transport of water transport of food 1.Occurs through xylem 1.Occurs through Phloem 2. Unidirectional. 2. Bidirectional b)Pepsin Trypsin 1.Activates in acidic medium. 1.Activates in alkaline medium 2. Works in stomach. 2. Works in small intestine	**2**
14	a)Vena Cava - deoxygenated blood from all body parts to right atrium b) Pulmonary vein - oxygenated blood from lungs to left atrium.	**2**
15	a) Because amount of oxygen dissolved in water is less than air. b) To prevent the collapsing of trachea even when there is no air in it. c) Plants are stationary and have large number of dead cells.	**3**