

केंद्रीय विद्यालय संगठनजयपुर संभाग,
Kendriya Vidyalaya Sangathan, Jaipur Region

अभ्यास पत्र /Practice Paper :2024-25

सेट सं./ SET NO.- 1

कक्षा/ Class : 10वीं

विषय/ Subject : Science (086)

अधिकतम अंक/ M.M: 80

Marking Scheme

SECTION A

QUESTIONS

Q.N	QUESTIONS	MARKS
1	(b) Grasshoppers & cattle	1 11
2	(d) Out of the field	1
3	(d) 16:1	1
4	(a) A and D	1
5	(a) The size of pupil will decrease, and less light will enter the eye	1
6	(b) Sign- Positive, Value -More than 1	1
7	(c) 1:1	1
8	(c)Cerebellum	1
9	(d) under secretion of hormone produced by pituitary gland	1
10	(d) Both (a) and (b)	1
11	(d) ii. and iv.	1
12	(c) (i) and (ii) only	1
13	(c) (ii) only	1
14	(b) (i) and (iii)	1
15	(d) Y is a non-metal and Z is a metal	1
16	(a) Most reactive: C; Least reactive	1
17	(d) A is False but R is true	1
18	(c) A is true but R is false	1
19	(a) Both A and R are true and R is the correct explanation of A	1

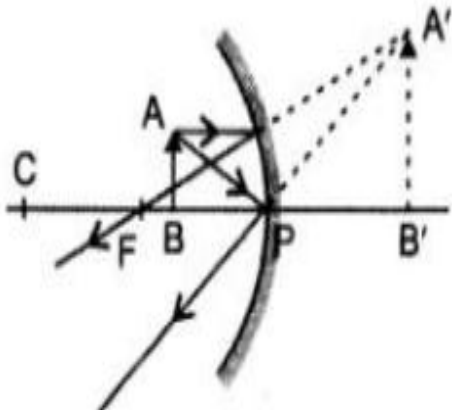
20	(a) Both A and R are true and R is the correct explanation of A	1
SECTION B		
21	A coil of many circular turns of wire wrapped in the shape of a cylinder, is called a solenoid. The magnetic field lines in a solenoid, through which current is passed, is very similar to that of a bar magnet. One end of the coil acts like a magnetic north pole, while the other acts like a south pole. The magnetic field produced by a long solenoid has all the properties of the field produced by a bar magnet	2
22	<p>(i) $P=1100W$ $V=220V$ i) $P=V^2 /R$ $1100= 220 \times 220/R$ $R=44 \Omega$ (ii) $I =V/R=220/44=5A$</p> <p style="text-align: center;">OR</p> <p>Given in the question Resistivity of copper = $1.6 \times 10^{-8} \Omega/m$, Diameter of wire, $d = 0.5 \text{ mm}$ Resistance of wire, $R = 100 \Omega$ Radius of wire, $r = d/2 = 0.52\text{mm}/2 = 0.25\text{mm} = 2.5 \times 10^{-4} \text{ m}$ Area of cross-section of wire, $A = \pi r^2 \therefore A = 3.14 \times (2.5 \times 10^{-4})^2$ $= 1.9625 \times 10^{-7} \text{ m}^2 = 1.9 \times 10^{-7} \text{ m}^2$ As, $R = \rho/A \therefore 100 \Omega = 1.6 \times 10^{-8} \Omega \text{m} \times l / 1.9 \times 10^{-7} \text{ m}^2$ <u>$l = 1225 \text{ m}$</u></p>	1+1
23	<p>Violet flowers white flowers $VV \times vv$ All the F1 plants will be heterozygous violet flowered F1 self pollination to get F2 In F2 generation There will be: Phenotype ratio - 3 Violet flowers: 1 white flower Percentage of white flowered plant is 25% (1/4)</p> <p style="text-align: center;">OR</p> <p>The correct answer is trait B. In asexually reproducing organisms, the traits are passed onto the next generation with almost no changes. The trait which is passed on to more number of generations will exist and will express in a larger amount of population when compared to a newly expressed trait.</p>	1+1
24	<p>Correct diagram and correct answer with labelling</p> <p>i) Urethra ii) Urinary Bladder</p>	1+1/2+1/2

25	(a) Anode-Oxygen, Cathode-Hydrogen (b) In water, hydrogen and oxygen are in the ratio 2:1	2
26	Alkenes, having general formula as C_nH_{2n} and alkynes, having general formula as C_nH_{2n-2} are the class of hydrocarbons in which addition reaction is possible. The essential conditions for addition reaction are : (i) Presence of unsaturated hydrocarbon. (ii) Presence of catalyst such as Ni/Pt/Pd. Ethene with hydrogen when it is heated in the presence of nickel catalyst to form ethane.	1+1
SECTION C		
27	Correct Diagram of magnetic field lines produced around a current carrying straight conductor The magnetic field lines around a straight conductor carrying resistance current are concentric circles whose centre lies on the wire. (ii) When a point where magnetic field is to be determined is moved away from the straight wire, the strength of the magnetic field decreases because as we move away from a current carrying straight conductor, the concentric circles around it representing magnetic field lines become larger and larger indicating the decreasing strength of magnetic field	1 2
28	(a) The defect of vision he is suffering from is called short - sightedness(Myopia). CORRECT DIAGRAM (b) This defect can be corrected using a diverging lens. (c) The type of lens used to correct this defect is concave Lens.	2 $\frac{1}{2}$ $\frac{1}{2}$
29	There are 23 pairs of chromosomes present in human beings. There is 1 pair of sex chromosomes present in human beings. Males contain one X chromosome and one Y chromosome (XY), while females contain two X chromosomes (XX). If a sperm carrying Y-chromosome fertilizes an ovum carrying X-chromosome, then the child born will be a boy. If a sperm carrying X-chromosome fertilizes an ovum carrying X-chromosome, then the child born will be a girl. CORRECT FLOW CHART	2 1 1
30	(a) (i) Insulin is secreted by pancreas. $\frac{1}{2}$ (ii) Thyroxin is secreted by thyroid gland. $\frac{1}{2}$ (b) The timing and amount of hormone released are regulated by feedback mechanism. 1e.g.,: If the sugar level in blood rise, they are detected by the cells (Islets of Langerhans) of pancreas which respond by producing more insulin. As the blood sugar level falls, insulin secretion is reduced. 1	$\frac{1}{2}$ $\frac{1}{2}$ 2

31	<p>(i) Brown fumes, white residue. 1</p> <p>(ii) Decomposition reaction 1</p> $2\text{Pb}(\text{NO}_3)_2 \rightarrow 2\text{PbO} + 4\text{NO}_2 + \text{O}_2$ <p style="text-align: center;">OR</p> <p>When marble (CaCO_3) reacts with dil.HCl, CO_2 gas is evolved.</p> $\text{CaCO}_3 (\text{s}) + 2\text{HCl} (\text{aq}) \rightarrow \text{CaCl}_2 (\text{aq}) + \text{H}_2\text{O} (\text{l}) + \text{CO}_2 (\text{g})$ <p>When the gas evolved is passed through lime water, it becomes milky due to the formation of insoluble calcium carbonate.</p> $\text{Ca}(\text{OH})_2 + \text{CO}_2 (\text{g}) \rightarrow \text{CaCO}_3 (\text{s}) + \text{H}_2\text{O} (\text{l})$ <p>When CO_2 gas is passed in excess through lime water, the milkiness disappears</p> $\text{CaCO}_3 (\text{s}) + \text{CO}_2 (\text{g}) + \text{H}_2\text{O} (\text{l}) \rightarrow \text{Ca} (\text{HCO}_3)_2 (\text{aq})$	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>
32	<p>Yes, the impact of removing all the organisms in a trophic level will be different for different trophic levels, e.g., removal of all the producers (T1) will adversely affect all the types of consumers including herbivores and carnivores, while the removal of all the herbivores will adversely affect only the carnivores but there will be increase in the number of the producers. No, Removal of all the organisms of any trophic level will always adversely affect the ecosystem, e.g., the removal of lions and tigers (top carnivores) will cause rapid increase in deer population, which will lead to rapid consumption of vegetation resulting in scarcity of vegetation and population crash of deer</p>	3
33	<p>a. Phenolphthalein will turn pink in soap solution.</p> <p>b. Chlorine is the by-product of chlor-alkali process which is used in the manufacture of bleaching powder.</p> <p>c. Universal indicator specifies the various levels of H^+ ion concentration.</p>	<p>1</p> <p>1</p> <p>1</p>
SECTION D		

34

- (i) Between 0-20 cm
- (ii) Virtual, erect, larger than the object and behind the
- (iii) Ray diagram:

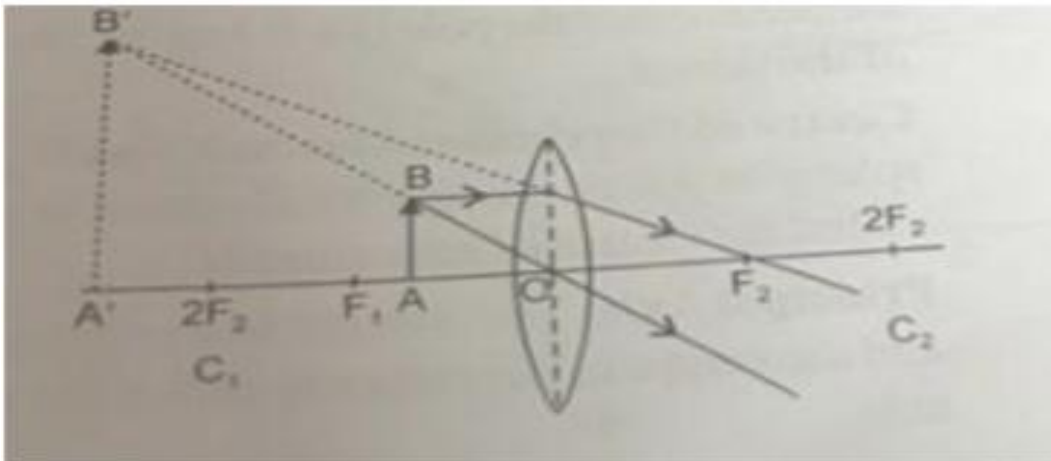


2
1
2

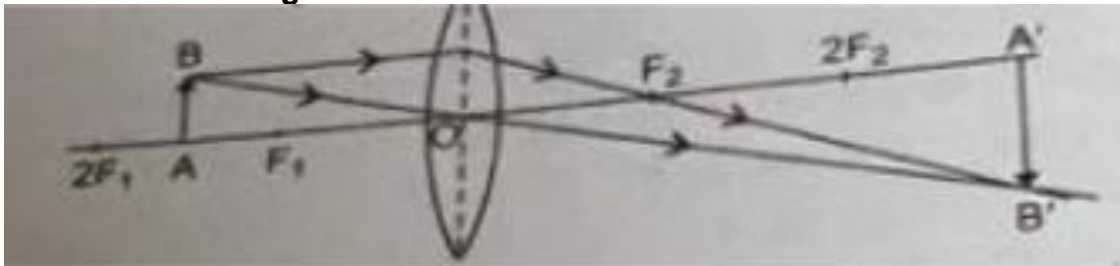
2+2+1

OR

(a) When the child holds the book between the optical center O and F_1 , an enlarged, virtual and erect image is formed as shown below:



Again when the child holds the book between F_1 and $2F_1$, words again become distinctly visible as the image is formed beyond $2F_2$, and is real, inverted and enlarged as shown below:



(b) Between the optical center (O) and its focus (F)

35

- a) It provides a large surface area for nutrients (glucose) and oxygen to pass from the mother's side to the embryo and waste substances from the embryo's side to the mother's blood.
- b) (i) Before release of a fertilised egg - The inner lining of the uterus becomes thick and soft with lot of blood capillaries
(ii) The lining of the uterus slowly breaks and comes out through the vagina as blood and mucous. This cycle takes place roughly every month and is known as menstruation. It usually lasts for about two to eight days.
- c) Correct differences between them -

Zygote	Foetus
Zygote is the fertilised egg which is formed by the fusion of sperm and egg	A foetus is the stage of embryo in which all recognisable parts of the body tends to reflect
Sperm and cell nuclei fuse	Organ systems grow and mature

OR

- (a) A is pollen grain, B- Stigma, C- Pollen tube and D- Ovule
- (b) Part B is stigma. It is the part of pistil (female reproductive organ) that receives pollen grains. Pollen grains reach stigma through various agencies like wind, water, insect, etc.
- (c) Pollen tube (C) carries male gametes to the ovule present in ovary. Male gametes fuse with egg and secondary nucleus to give rise to zygote and endosperm.
- (d) Female gamete (D) fuses with male gamete and converts to embryo after fertilisation.

1+2+2

1+1+2+1

38	<p>a) Mammals- 4 chamber heart and reptiles- 3 chambered heart b) Blood goes through the heart twice during each cycle known as double circulation. Or</p> <div data-bbox="574 257 965 492" data-label="Diagram"> <p>The diagram illustrates the heart and blood circulation system. It shows the heart with four chambers: Right Atrium, Right Ventricle, Left Atrium, and Left Ventricle. Blood flows from the Right Ventricle to the Lungs (Pulmonary Circulation) and from the Left Ventricle to the rest of the body (Systemic Circulation). Labels indicate pressure levels: High Pressure in the pulmonary artery, Low Pressure in the pulmonary vein, Lowest Pressure in the venae cavae, and Highest Pressure in the aorta.</p> </div> <p>c) Blood contains respiratory pigment hemoglobin which has high affinity for oxygen. Oxygen binds with hemoglobin and is then carried to various body parts through blood circulation. In the tissue region oxygen diffuses from blood to the tissue. Carbon dioxide is more soluble in water than oxygen is and hence is mostly transported in the dissolved form in our blood.</p>	1+1+2
39	<p>1. C, D 2. B 3. Saturated Hydrocarbon :- CONTAINING SINGLE BOND C_7H_{16}, C_9H_{20} Un Saturated Hydrocarbon :- CONTAINING DOUBLE OR TRIPLE BOND C_8H_{16}, C_5H_{10}, C_4H_6, C_6H_{10} Any other correct difference, marks should be given Or because there is a the single bond between the carbon atoms ,</p> <div data-bbox="279 1288 566 1489" data-label="Chemical-Block"> $\begin{array}{c} \text{H} \quad \text{O} \\ \quad \\ \text{H} - \text{C} - \text{C} - \text{OH} \\ \\ \text{H} \end{array}$ </div>	1+1+2