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**GRAND
TEST**

**SSC EXAMINATION
SCIENCE & TECHNOLOGY (72) SOLUTION
PAPER - II (SET-A)**

Q. 1A Answer the following sub-questions.

Ans.1 a. fertility [1M]

b. Pulmonary [1M]

Ans.2 a. True [1M]

b. True [1M]

Ans.3 Reptiles [1M]

Q. 1B Rewrite the following statements by selecting the correct options : [5M]

Ans.1 (b) Budding [1M]

Ans.2 (b) Mitochondrion [1M]

Ans.3 (b) Oxygen [1M]

Ans.4 (d) colourless [1M]

Ans.5 (c) Glacial acetic acid [1M]

Q. 2 Attempt any five questions [10M]

Ans.1 1. Organisms referred to as 'connecting links' are those which are structurally intermediate between two different groups. [1M]

2. Connecting links can be found among organisms that are still living for example :

(a) 'Peripatus' has segmental nephridia, thin cuticle and parapodia like appendages as in Annelida. At the same time it has trachea and open circulation as in Arthropoda. [1/2M]

(b) The duck-billed platyphus lays eggs like reptile and has hair and mammary glands like mammals. [1/2M]

Ans.2	1. Movements which are under the control of our will are called Voluntary movements.	Movements which are not under the control of our will are called involuntary movements.
	2. It requires thinking action.	It does not require thinking action.

Ans.3 Copper is least reactive metal. When a fill of copper is strongly heated in air it does not burn, but on heating the hot metal is coated with a black coloured layer of copper oxide. [1M]



- Ans.4**
- For the digestion of fats, an alkaline medium is needed. Liver, the largest gland of the body, secretes a bile juice. [1/2M]
 - This alkalinity is brought about by the bile juice. [1/2M]
 - When the food enters the small intestine, the gall bladder releases bile into it.
 - Bile also helps to break down the large fat globules into smaller ones for easier digestion. [1/2M]
 - Pancreas secretes pancreatic juice. The enzyme lipase present in the Pancreatic juice helps in the digestion of fats. [1/2M]
 - Intestinal glands present in the wall of the small intestine secrete intestinal juice. The enzyme present in the juice break down the fats into fatty acids. [1/2 M]

Ans.5 The receptor of tongue is gustatory [1M]
And the receptors of nose is olfactory. [1M]

- Ans.6**
- In sexual mode reproduction, two parents are involved. [1/2M]
 - Each one has its own DNA copies that are passed on through their nuclei at the time of fertilization of gametes. [1/2M]
 - Therefore more diversity is produced.
 - Moreover, the process of meiosis time at the time of gamete formation, also produces variation [1 M]
 - Hence, in Sexual mode of reproduction, greater diversities are generated.

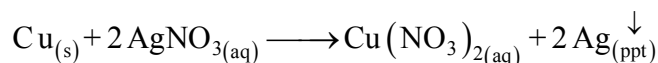
Q. 3 Attempt any five questions : [15]

- Ans.1**
- Magnesium has atomic number 12 and its electronic configuration is (2,8,2) [1/2M]
 - Thus magnesium atom has 2 electrons in its outermost shell. [1/2M]
 - It loses 2 electrons from its outermost shell i.e. M shell and acquires a stable octet.
 - Due to lose of electron, magnesium attains a positive charge (Mg ++).
 - On the other hand, atomic number of chlorine is 17, and its electronic configuration is (2, 8, 7) i.e. it has 7 electrons in its outermost shell. [1/2M]
 - Thus chlorine requires one electron to complete it octate state. [1/2M]
 - The two electrons lost by magnesium are taken up by chlorine atoms there by attaining negative charge.
 - Magnesium and chloride ions being oppositely charged attract each other by electrostatic force of attraction. An ionic bond is formed and this results in the formation of MgCl₂ molecule. [1M]

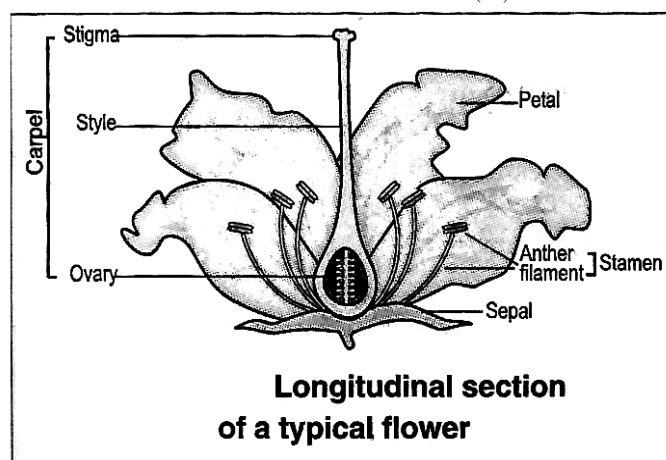
- Ans.2**
1. Villi are finger like projections seen on the wall of the small intestine. [1M]
 2. Villi carry out the function of absorption of digested food. [1M]
 3. The blood capillaries present in the villi carry the food substances to different cells in the body. [1M]

- Ans.3**
1. Dirt is oily in nature and oil does not dissolve in water. [1/2M]
 2. The molecules of soap are sodium or potassium salts of long chain carboxylic acids. [1/2M]
 3. A soap molecule has a tadpole structure. Its two ends have different properties. [1/2M]
 4. At one end of the soap molecule, there is a carboxylate ion which is hydrophilic, i.e. water soluble but insoluble in oil. [1/2M]
 5. At the other end, there is a hydrocarbon chain which is hydrophobic i.e. insoluble in water but soluble in oil. [1/2M]
 6. When soap is mixed with water, the solution becomes concentrated and causes foaming. [1/2M]
 7. The hydrocarbon chain of soap, due to attraction surrounds the dirt and absorbs the dirt in it.
 8. The carboxylate ion end turns away from the dirt.
 9. Thus, soap molecules help in dissolving the dirt in water and we can wash our clothes clean.

- Ans.4**
1. When Sunil dipped a copper coin in a solution of silver nitrate, after some time a silver shine is seen on the coin because of the displacement reaction forming copper nitrate. [1M]
 2. In this reaction, more reactive copper displaces silver which is less reactive from silver nitrate solution. [1M]
 3. Thus silver shine is seen on the coin as the silver so liberated deposits on the copper coin. [1M]



Ans.5



[3M]

Ans.6 Large families affect both the individual as well as the community life.

The disadvantages of large size family life are as follows:

1. Economic pressure [1/2M]
2. Mother's poor health [1/2M]
3. children neglected at home [1/2M]
4. Poor housing [1/2M]

5. Malnutrition [1/2M]
6. Insufficient medical care [1/2M]
7. Lack of better education

Q. 4 Attempt any one of the following. [5M]

Ans.1 The term eco efficiency was coined by World Business Council for Sustainable Development (WBCSD) in 1992. Eco efficiency means the provision of goods and services using fewer resources and creating less waste. The ways to achieve Eco efficiency are as follows :

1. Use of alternative source of raw material : straw and rice straw are used as substitution for wood. Wheat straw can be used in cement bonded particle boards and rice straw can be used in insulation boards to replace the woods. [1M]
2. Shifting to renewable source of energy: [1M]
They do not create any pollution and are inexhaustible eg : solar power, wind power, etc.
3. Technology that reduces pollution: [1M]
It means use of technology that are pollution free eg: CNG , unleaded petrol (does not release harmful gas).
4. Reusing and recycling: [1M]
Reusing is a type of green technology waste such as paper, plastic, metals should be recycled.
5. Durable goods : [1M]
Durable good can be used for a longer time as they reduce the consumption of resources for the production of newer goods.

Ans.2 A group of organic compounds containing same functional group, which can be represented by the same general formula and which more or less show similar trends in their properties is known as Homologous series. [1M]

1. The general formula of all compound in the series is the same. [1M]
2. They have the same functional group. [1M]
3. Physical properties like melting point, boiling point, density, generally show a gradual change with increase of molecular formula in the series. On the other hand, chemical properties of the member show close resemblance because of the presence of the same functional group in them.[1M]
4. Consecutive members of the series differ from one another by $-CH_2$ group which is known as the methylene group and their molecular weight differs by 14 units. [1M]