

# ST. JOSEPH'S HR. SEC.SCHOOL

Chengalpattu – 603 002.

*FINGER TIPS*

## SCIENCE 10

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## 1. HEREDITY AND EVOLUTION

1. Mendel observed 7 pairs of contrasting characters in *Pisum Sativum*. One of the following is not a part of that. Find out. (**Smooth and rough stem**)
2. Primitive man evolved in – (**Africa**)
3. Which of the following is inheritable (**an altered gene in testes**)
4. Theory of natural selection was proposed by - (**Charles Darwin**)
5. Somatic gene therapy (**affects body cell**)
6. Biotechnologically synthesized vitamin \_\_\_\_\_ is used, to cure pernicious anaemia (**Vitamin B<sub>12</sub>**)
7. Diabetes is treated by the biotechnologically produced (**Insulin**)

## 2. IMMUNE SYSTEM

1. Pick out a case of healthy state of an individual. (**Mr. K is attending to his duty and spends time joyfully**)
2. Which one of the following is a state of a disease in which a person is not socially balanced? (**He behaves rudely even for menial matters**)
3. Pick out the bacterial disease (meningitis, rabies, tetanus, small pox) (**Tetanus**)
4. One of the following is transmitted through air. Find out? (**Tuberculosis**)
5. The most serious form of malaria is caused by Plasmodium \_\_\_\_\_. (**P. falciparum**)
6. An example for protozoan infecting our intestine is \_\_\_\_\_. (**Entamoeba histolytica**)
7. One of the means of indirect transmission of a disease is \_\_\_\_\_. (**Utensils of patients**).
8. When antibodies, extracted from some other animal is injected into Your body, what kind of immunity do you gain? (**Artificial passive acquired immunity**)
9. The first vaccine injected into a just born baby is \_\_\_\_\_. (**BCG**)
10. Pick out a non-antigen. Entry of \_\_\_\_\_. (germ, toxins of germs, new forms of protein) (**Mother's Milk**)
11. In the following Plasmodium which one cause malignant and fatal malaria. (**Plasmodium falciparum**)
12. Give an example for protein deficiency disease (**Marasmus**)

## 4. REPRODUCTION IN PLANTS

1. This is the one of the methods of reproduction in unicellular organisms like amoeba and bacteria in which they split into two equal halves and produce new ones is called. (**Binary fission**)
2. In sexual reproduction of flowering plants, the first event involved in this is. (**Pollination**)
3. Which of the following statement is true?  
(**Uninucleate non-motile asexual spores are produced by the fungus are called conidia**)
4. The fertilized ovary is a fruit. The fruit develops from a single flower with multi carpellary, apocarpous superior ovary is (**Aggregate fruit**)
5. If a water soaked seed is pressed, a small drop of water comes out through. (**micropyle**)
6. The mango fruit is called as stone fruit. Because it has.....?. (**Hard endocarp**)
7. Pick out the wrong statement. (In a dicot seed there is a short longitudinal whitish ridge is called the raphe, There is a minute opening in dicot seed is known as micropyle, The rudimentary stem portion known as radicle, The rudimentary root portion is called radicle) (**The rudimentary stem portion known as radicle**)

8. Consider the following statement regarding the dispersal of fruit by wind and select the correct answer. (**Fruits of tridax are carry a persistent Calyx modified into pappus**)
9. The product of triple fusion which acts as nutritive tissue for the development of embryo is (**endosperm**)
10. The disadvantage of self pollination is (**The seeds are less in number**)
11. Give examples for schizocarpic fruit (**Lomentum, Cremocarp, Regma,**)
12. The pollentubes grow towards ovule. This is (**Chemotropism**)
13. Which is the female reproductive part of a flower? (**Gynoecium**)
14. The integuments of the Ovule develop into (**Seed Coat**)

### 6.LIFE PROCESSES

1. In monotropa the special type of root which absorbs nourishment is (**Mycorrhizal root**)
2. The product obtained in the anaerobic respiration of yeast is (**Ethanol**)
3. The roots of coconut tree are seen away from the plant. Such kind of movement of root is (**Hydrotropism**)
4. The xylem in the plants are responsible for (**transport of water**)
5. The autotrophic nutrition requires (CO<sub>2</sub> and water, chlorophyll, sunlight, all the above) (**all the above**)

### 7. CONSERVATION OF ENVIRONMENT

1. Which of the following groups contain only bio degradable items? (**Grass, flowers and leather or Cake, wood and grass**)
2. Which of the following constute a food chain? (**Grass,goat and human**)
3. Which of the following are environmental friendly practices? (Carrying cloth bags to carry the purchase items during shopping, switching off light and fans when not in use, use the public transport, all the above) (**all the above**)
4. What is called as 'Black Gold'? (**Petroleum**)
5. Odd one out. (Plants, grasshopper, frog, tiger, snake) (**Tiger**)
6. Example for product of green chemistry is (**bio plastics**)
7. \_\_\_\_\_ green house gas which causes climate change and global warming. (**carbondioxide**)
8. The \_\_\_\_\_ forms decomposer in the pond ecosystem (**bacteria**)
9. \_\_\_\_\_ chemical is used in seeding clouds (**potassium iodide**)
10. Example for fossil fuel is (**coal**)
11. Which is the chief component of Coal.( **Carbon**)

### 9.SOLUTIONS

1. A true solution is a homogenous mixture of solute and solvent. Chalk powder in water is a heterogenous mixture. Is it a solution? (**No, it is a colloidal solution**)

- The solution that contains water as the solvent is called aqueous solution. If carbon disulphide is a solvent in a given solution, then the solution is called \_\_\_\_\_.  
**(Non – aqueous solution)**
- Solubility of common salt in 100g water is 36g. If 20g of salt is dissolved in it how much more is required to attain saturation. **(16g)**
- If two liquids are mutually soluble, they are called \_\_\_\_\_ liquids. **(Miscible)**
- When sunlight passes through window of the classrooms its path is visible. This is due to \_\_\_\_\_ of light. **(Scattering)**
- The particles in various forms are visible only under ultramicroscope. A solution containing such particles is called \_\_\_\_\_. **(Colloidal solution)**
- The number of components in a binary solution is \_\_\_\_\_. **(Two)**
- The mixture of gases used by deep sea divers is \_\_\_\_\_ **(Helium - Oxygen)**
- Earth soil cannot store more nitrogen than it can hold. Hence earth soil is referred to be in a state of \_\_\_\_\_. **(Saturation)**
- In an endothermic process, solubility increases with \_\_\_\_\_ in temperature.  
**(Increase)**
- The solubility of Sodium Nitrate in water is ( **92 g**)
- When sunlight passes through the window of your house, the dust particles scatter the light making the path of the light visible. This phenomenon is called as ( **tyndall effect**)
- Which of the following is a true solution( Milk, Salt in carbon disulphide, Blood, Sugar solution ) **(Sugar solution)**

## 11. CHEMICAL REACTIONS

- $Zn + 2HCl \rightarrow ZnCl_2 + H_2 \uparrow$   
The above reaction is an example of ..... ( **Displacement reaction**)
- A reddish brown coloured element 'X' on heating in air becomes black coloured compound 'Y'. X and Y are \_\_\_\_\_ and \_\_\_\_\_ **(Cu, CuO)**
- A student tested the pH of pure water using a pH paper. It showed green colour. If a pH paper is used after adding lemon juice into water, what color will he observe? ( **Red**)
- Chemical volcano is an example of **(decomposition reaction)**
- When crystals of lead nitrate on heating strongly produces a \_\_\_\_\_ gas and the colour of the gas is \_\_\_\_\_. **(NO<sub>2</sub>, Reddish Brown )**
- When aqueous solution of silver nitrate and sodium chloride are mixed \_\_\_\_\_ precipitate is immediately formed **(white)**.
- Zinc can displace aluminium metal from aqueous solution of aluminium sulphate **(zinc is more reactive than aluminium)**
- To protect tooth decay, we are advised to brush our teeth regularly. The nature of the tooth paste commonly used is \_\_\_\_\_ in nature. **(Basic)**
- Vinegar is present in acetic acid. Curd contains \_\_\_\_\_ acid **(Lactic acid)**

10.  $\text{pH} = -\log_{10} [\text{H}^+]$ . The pH of a solution containing hydrogen ion concentration of 0.001M solution is \_\_\_\_\_. (3)
11. On heating the green colour copper carbonate changes into ----- colour resulting in the formation of copper oxide? ( **black** )
12.  $\text{pH} + \text{pOH} = 14$ . If the value of pOH of a substance is 3, its pH is (11)
13. Any metal mixed with mercury is called \_\_\_\_\_ ( **Amalgam** )
14. The percentage of purity of Gold is calculated for making ornaments. ( **22 / 24 x 100** )
15.  $2 \text{KClO}_3 \text{ ----- } > 2 \text{KCl} + 3 \text{O}_2$ . In this chemical reaction  $\text{MnO}_2$  acts as ( **catalyst** )

## 12. PERIODIC CLASSIFICATION OF ELEMENTS

1. In the modern periodic table periods and groups are given. Periods and groups indicate----- ( **Rows and Columns** )
2. Third period contains 8 elements, out of these elements how many elements are non-metals? ( **5** )
3. An element which is an essential constituent of all organic compounds belongs to ----- group. ( **14th group** )
4. Ore is used for the extraction of metals profitably. Bauxite is used to extract aluminium, it can be termed as \_\_\_\_\_. ( **ore** )
5. Gold does not occur in the combined form. It does not react with air (or) water. It is in \_\_\_\_\_. ( **native state** )
6. **Assertion:** Greenish layer appears on copper vessels if left uncleaned.  
**Reason:** It is due to the formation of layer of basic copper carbonate  
Give your correct option. ( **assertion and reason are correct and relevant to each other** )
7. A process employed for the concentration of sulphide ore is \_\_\_\_\_. ( **froth floatation** )
8. Coating the surface of iron with other metal prevents it from rusting. If it is coated with thin layer of zinc. It is called \_\_\_\_\_. ( **galvanization** )
9. Any metal mixed with mercury is called amalgam. The amalgam used for dental filling is \_\_\_\_\_. ( **Ag – Sn amalgam** )
10. **Assertion:** In thermite welding, aluminium powder and  $\text{Fe}_2\text{O}_3$  are used.  
**Reason:** Aluminium powder is a strong reducing agent. Does the reason satisfy the assertion? ( **Yes** )
11. Elements of Group 3 to 12 in the long form of periodic table are called. ( **transition elements** )
12. Atomic number of Iron is 26. Its electronic configuration is ( **2,8,14,2** )
13. To design the body of the aircraft \_\_\_\_\_ alloys are used. ( **Aluminium** )
14. Modern periodic law states that the physical and chemical properties of elements are the periodic function of their ( **atomic number** )
15. Second group element are called ----- ( **alkaline earth metals** )

## 13. CARBON AND ITS COMPOUNDS

1. **Assertion:** Chemical bonds in organic compounds are covalent in nature.

- Reason:** Covalent bond is formed by the sharing of electrons in the bonding atoms.  
Does the reason satisfy the given assertion? **(Yes)**
2. **Assertion:** Diamond is the hardest crystalline form of carbon  
**Reason:** Carbon atoms in diamond are tetrahedral in nature.  
Verify the suitability of reason to the given Assertion mentioned above.  
**( No, Carbon atoms in diamond forms a rigid three dimensional structure.)**
3. **Assertion:** Due to catenation a large number of carbon compounds are formed.  
**Reason:** Carbon compounds show the property of allotropy.  
Is the reason holding good for the given Assertion. **(No)**
4. Buckminster Fullerene is the allotropic form of **(Carbon)**
5. Even though it is a non metal, graphite conducts electricity. It is due to the presence of ..... **(free electrons)**
6. Formula of methane is  $\text{CH}_4$  and its succeeding member ethane is expressed as  $\text{C}_2\text{H}_6$ . The common difference of succession between them is **( $\text{CH}_2$ )**
7. IUPAC name of first member of alkyne is ..... **(ethyne)**
8. Out of ketonic and aldehydic group which is the terminal functional group?  
**(Aldehyde group - CHO)**
9. Acetic acid is heated with a solid 'X' kept in a test tube. A colourless and odourless gas (Y) is evolved. The gas turns lime water milky when passed through it. Identify X and Y.  
**(X -  $\text{Na}_2\text{CO}_3$ , Y -  $\text{CO}_2$ )**
10. **Assertion:** Denaturation of ethyl alcohol makes it unfit for drinking purposes.  
**Reason:** Denaturation of ethyl alcohol is carried out by methyl alcohol.  
Check whether the reason is correct for assertion. **(Yes, methyl alcohol is poisonous in nature, when mixed with ethyl alcohol it becomes poisonous)**
11. Ethanol on oxidation in the presence of alkaline potassium permanganate or acidified potassium dichromate gives the following acid. **( Ethanoic acid or Acetic acid )**
12. The functional group of carboxylic acid is \_\_\_\_\_ **(-COOH )**
13. The saturated hydrocarbons form homologous series with the general formula  $\text{C}_n\text{H}_{2n+2}$ . The formula of the second member in this series is **( $\text{C}_2\text{H}_6$ )**

## 15. LAWS OF MOTION AND GRAVITATION

- The acceleration in a body is due to \_\_\_\_\_. **(Un-balanced force)**
- The physical quantity which is equal to rate of change of momentum is \_\_\_\_\_. **(Force)**
- The momentum of a massive object at rest is \_\_\_\_\_. **(Zero)**
- The **weight of 50 kg** person at the surface of earth is \_\_\_\_\_. **(50 N)**
- Mass of an object is 50kg.** what is its weight on the earth?. **(490 N)**
- The freezing of biotechnology products like vaccines require \_\_\_\_\_ freezing Systems. **(Nitrogen)**
- Metals frozen to low temperature showed more resistance to wear. This is known as . **( cryogenic hardening)**

**16. ELECTRICITY AND ENERGY**

1. The potential difference required to pass a current 0.2 A in a wire of resistance 20 Ohm is \_\_\_\_\_. (**4 V**)
2. Two electric bulbs have resistances in the ratio 1: 2. If they are joined in series, the energy consumed in these are in the ratio \_\_\_\_\_. (**1: 2**)
3. Kilowatt-hour is the unit of \_\_\_\_\_. (**Electric energy**)
4. \_\_\_\_\_ surface absorbs more heat than any other surface under identical conditions. (**Black**)
5. The atomic number of natural radioactive element is \_\_\_\_\_. (**Greater than 82**)
6. Fuse is a piece of wire made of an alloy (**37% lead 63% tin**)
7. 1 kwh is equal to ( **$3.6 \times 10^6$ J**)
8. Voltmeter is used to measure \_\_\_\_\_ (**Potential difference**)
9. From the following statements write down that which does not represent ohm's Law. (**Current = resistance x Potential difference**)
10. The symbol for closed switch is ..... (.....( . ).....)
11. Electric power can be transmitted over long distance without much loss of energy is an important advantage of .....(**AC**)
12. Einsteins mass energy relation is ( **$E = mc^2$** )

**17. MAGNETIC EFFECT OF ELECTRIC CURRENT AND LIGHT**

1. The magnification produced by a mirror is 1/3, then the type of mirror is (**convex**)
2. Whenever magnetic flux linked with a coil changes an emf is produced in the circuit is Called \_\_\_\_\_. (**Electromagnetic induction**)
3. An electric current through a metallic conductor produces \_\_\_\_\_ around it. (**Magnetic field**)
4. The field of view is maximum for (**convex mirror**)
5. An object is placed 25 cm from a convex lens whose focal length is 10 cm. The image distance is \_\_\_\_\_. (**16.66 cm**)
6. The focal length of a concave lens is 2 m then the power of the lens is (**-0.5D**)
7. Magnetic field is a quantity that has (**both magnitude and direction**)
8. In Fleming's left hand rule, the fore finger represents the direction of (**magnetic field**)
9. Eye lens is a \_\_\_\_\_(**double convex lens**)
10. Twinkling of stars is due to \_\_\_\_\_ (**atmospheric refraction**)
11. The Hubble space telescope consists of ----- mirrors (**hypher bolic**)

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