



Roll No.....

Total No. of Questions : 18]

[Total No. of Printed Pages :

*SSERKDO18*

*20205-C*

*SCIENCE*

*(Physics, Chemistry & Life Science)*

**Time : 3 Hours]**

**[Maximum Marks : 70]**

Section-A

(PHYSICS)

(Long Answer Type Questions)

1. Draw the ray diagrams and find the position, size and nature of image formed in case of a convex lens when object is placed (a) in between focus and twice the focus (b) in between optical centre and focus. Mark the positions of object and image in the diagram.

OR

An object 4 cm in size is placed at 25 cm in front of a concave mirror of focal length 15 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image? Find the nature and size of image formed.

(Short Answer Type Questions)

2. Define power of accommodation. What is the far point and near point of the human eye with normal vision?

Or

What is Hypermetropia? Draw the diagram and show how it is corrected.

3. Define potential difference. Give its units and define it.

OR

Draw the symbols of some commonly used components in circuit diagram (only eight).

4. What is Solenoid ? How does a solenoid behave like a magnet?

OR

How will you prove that current carrying conductor produces the magnetic field ? Draw the diagram.

(Very Short Answer Type Questions)

5. (i) Name four types of energy that we get from ocean.

(ii) Magnification produced by a plane mirror is +1. What does this mean?

(iii) Name the types of mirrors used in the following situations :

(a) Head lights of a car

(b) Side/rear view mirror of a vehicle

(Multiple Choice Questions)

6. (i) A person cannot see the objects, beyond 1.2 m distinctly. The corrective lens used to restore proper vision is : <https://www.jkboseonline.com>

(a) concave lens

(b) convex lens

(c) cylindrical lens

(d) bifocal lens

(ii) Which of the following is not an insulator ?

(a) Plastic

(b) Rubber

(c) Graphite

(d) Diamond

(iii) The main source of energy on the earth is :

(a) Coal

(b) Sun

(c) Petroleum

(d) Natural Gas

(iv) Which of the following terms does not represent electric power in a circuit ?

(a)  $I^2R$

(b)  $IR^2$

(c)  $VI$

(d)  $V^2/R$

Section-B

(CHEMISTRY)

(Long Answer Type Questions)

7. Describe the important chemical properties of carbon compounds. Write the equations for each reaction.

Or

What are soaps and detergents ? Explain the mechanism of cleaning action of soaps and detergents.

(Short Answer Type Questions)

8. Write the balanced chemical equations for the following reactions:

(i) Solution of barium chloride and sodium sulphate reacts in water to give barium sulphate and sodium chloride.

(ii) Sodium hydroxide solution reacts with hydrochloric acid to produce sodium chloride and water.

Or

Describe displacement and double displacement reactions. Give examples of each.

9. Give the reaction of metals with acids and salts. Give examples in each case.

Or

How copper is refined by the process of electrolytic refining ? Draw the diagram of electrolytic bath.

10. How can pH change in mouth cause tooth decay and how is it prevented ?

OR

How washing soda is Obtained ?

(Very Short Answer. Type Question)

11. (i) Write the two properties of carbon which lead to huge number of Carbon Compounds. <https://www.jkboseonline.com>

(ii) What would you observe when zinc is added to a solution of iron sulphate ? Write the chemical reaction that takes place.

(iii) Write the two limitations of Mendeleev's periodic table.

(Multiple Choice Questions)

12. (i) Which of the following statement is not correct, when going from left to right across the periodic table ?

(a) the elements become less metallic in nature

(b) The number of electrons increases

- (c) The atoms lose electrons more easily
- (d) The oxides of elements become more acidic
- (ii)  $\text{CaCO}_3 \xrightarrow{\Delta} \text{CaO} + \text{CO}_2$ , this reaction is an example of :
- (a) combination reaction
- (b) displacement reaction
- (c) double displacement reaction
- (d) decomposition reaction
- (iii) Which of the following elements is not metalloid?
- (a) Boron
- (b) Calcium
- (c) Germanium
- (d) Silicon
- (iv) Which of the following acids is used as a compound powder :
- (a) Carbonic acid
- (b) Acetic acid
- (c) Tartaric acid
- (d) Oxalic acid

Section - C

(LIFE SCIENCE)

(Long Answer Type Questions)

13. Describe briefly the process of digestion in man.

Or

What is Excretion ? Describe the various parts of excretory system of human beings along with well labelled diagram.

(Short Answer Type Questions)

14. What is reflex action ? Write the role of brain in reflex action.

Or

Draw the structure of neuron and explain its function.

15. Describe the human female reproductive system.

Or

Name the different modes of asexual reproduction in plants and explain one of them.

16. What is Biological Magnification? Will the levels of this magnification be different at different levels of the ecosystem?

Or

Why is damage to the ozone layer a cause for concern are being taken to limit this damage

(Very Short Answer Type Questions)

17. (i) Define homologous organs. Give an example.

(ii) What do you understand by re-use of material ? Give example.

(iii) Why do we need to manage our resources ?

(Multiple Choice Questions)

18. (i) Which of the following parts of Bryophyllum plant is vegetative ?

(a) leaves

(b) root

(c) stem

(d) flower

(ii) The male sex human chromosome is represented by:

(a) xx

(b) yy

(c) xy

(d) None of these

(iii) The ability of an organism to grow or replace the lost body part is known as :

(a) grafting

(d) regeneration

(c) layering

(d) budding

(iv) In evolutionary terms, we have more common with :

(a) a Chinese school boy

(b) a chimpanzee

(c) a spider

(d) bacterium