

I-4-A

Roll No.

Total No. of Questions : 18]

[Total No. of Printed Pages : 8

SSEPKM16

8704-A

SCIENCE

(Physics, Chemistry and Life Science)

Time : 3 Hours]

[Maximum Marks : 84

Section-A

(PHYSICS)

(Long Answer Type Questions)

1. Draw ray diagram to show the formation of image when the object is placed :

- (a) in front of a concave mirror
- (b) between its pole and focus point.

Or

Draw ray diagram to locate the image of an object if the object is placed between the optical centre and principal focus of a convex lens. What is the nature of the image ?

(Short Answer Type Questions)

2. Find the focal length of a lens of power -2.0 D. What type of lens is this?

Or

Define power of lens. State its S.I. unit.

3. What is dispersion of light ? What is the cause of dispersion of light?

Or

Why is a normal eye not able to see clearly the objects placed closer than 25 cm ?

4. What is meant by electrical potential? Give its units.

Or

What are the advantages of connecting electrical devices in parallel with the battery, instead of connecting them in series?

(Very Short Answer Type Questions) 2 each

5. The following very short answer type questions of two marks each may be answered in a few or few sentences or as may be required:

(a) Mention any two uses of wind energy.

(b) Explain different ways to induce current in a coil ?

(c) Why are electric bulbs filled with chemically inactive nitrogen or argon ?

(Multiple Choice Questions)

6. Choose the correct/most appropriate answer out of the following four alternatives given against each item and write it in your answer book : <https://www.jkboseonline.com>

(i) The human eye forms the image of an object at its :

(a) cornea

(b) pupil

(c) iris

(d) retina

(ii) A solar water heater cannot be used to get hot water on :

(a) sunny day

(b) a cloudy day

(c) a hot day

(d) a windy day

(iii) Electric charge is expressed in :

- (a) Volt
 - (b) Joule
 - (c) Coulomb
 - (d) Ohm
- (iv) At the time of short circuit, the current in the circuit :
- (a) reduces substantially
 - (b) does not change
 - (c) increases heavily
 - (d) varies continuously

Section-B

(CHEMISTRY)

(Long Answer Typo Questions)

7. What are Hydrocarbons ? Explain the various types of hydrocarbons with examples.

Or

What are Homologous series of compounds with example? What are the characteristics of a homologous series?

(Short Answer Type Questions) 4 each

8. What are Amphoteric Oxides ? Give examples of 2 amphoteric oxides.

Or

All ores are minerals but all minerals are not ores ? Justify.

9. What do you understand by double displacement reaction ? Explain with two examples.

Or

What is a balanced chemical equation ? Why should chemical equation be balanced ? Explain with two examples.

10. How does the metallic character of the elements vary :

- (a) in a group
- (b) in a period ?

Or

Which physical and chemical properties of the elements were used by Mendeleev in creating his periodic table ?

(Very Short Answer Type Questions) 2 each

11. The following very short answer type questions of two marks each may be answered in a few words or few sentences of as may be required : <https://www.jkboseonline.com>

- (i) Draw the electron dot structures for propanone (b) Ethanoic acid.
- (ii) Which bases are called Alkalies? Give an e.g. of Alkalies.
- (iii) Write the name of two 'neutral oxides' ?

(Multiple Choice Questions) 1 each

12. choose the correct/most appropriate answer out of the four alternatives given against each item and write it in your answer-book :

(i) The strength of acids depends upon :

- (a) H^+
- (b) OH^+
- (c) COOH
- (d) Both (a) and (b)

(ii) A solution turns red litmus blue its pH is likely to be :

- (a) 1
- (b) 5
- (c) 4
- (d) 10

(iii) Lime water is :

- (a) CaO

(b) Ca(OH)_2

(c) CaCO_3

(d) CaCl_2

(iv) Which of the following metal is protected by a layer of its oxides?

(a) Copper

(b) Silver

(c) Iron

(d) Aluminium

Section-C

(LIFE SCIENCE)

(Long Answer Type Questions)

13. Explain the mechanism of gaseous exchange between tissue and blood.

Or

With the help of diagram describe the structure and function heart.

(Short Answer Type Questions) 4 each

14. How does phototropism occur in plants ?

Or

Draw the structure of a neuron and explain its function.

15. What is the role of seminal vesicles and prostate glands.

Or

What is Pollination ? Describe cross pollination.

16. Explain the importance of fossils in deciding evolutionary relationships.

Or

What are Fossils ? How do they tell us about the process of evolution ?

(Very Short Answer Type Questions) 2 each

17. The following very short answer type questions of very short answer type questions of two marks each may be answered in a few words or few sentences or as may be required :

- (i) Which compounds are responsible for the depletion of Ozone Layer ?
- (ii) What is meant by sustainable management ?
- (iii) Name two sexually transmitted diseases caused by virus.

(Multiple Choice Questions) 1 each

18. Choose the correct/most appropriate answer out of the four alternatives given against each item and write it in your answer-book :

- (i) Ozone is depleted by :
 - (a) Methane
 - (b) Chlorofluoro carbons
 - (c) Carbon dioxide
 - (d) Hydrogen sulphide
- (ii) The term Ecosystem was introduced in a food chain there is :
 - (a) Bidirectional flow of energy
 - (b) Zig zag flow of energy
 - (c) Metlirectional flow of energy
 - (d) Unidirectional flow of energy
- (iii) Large scale, deforestation decreases :
 - (a) Soil erosion
 - (b) Rainfall
 - (c) Drought
 - (d) Global warming

(iv) Coal and Petroleum are :

(a) Used in biogas production.

(b) Fossil fuel

(c) Fuel wood

(d) Inorganic fuel resources