

TOTAL NO. OF Questions : 18]

[Total No. of Printed pages : 6

XARPLKGN20

2602

SCIENCE

(Physics, Chemistry and Life Science)

Time : 3 Hours]

[Maximum Marks : 84

Section-A

(PHYSICS)

(Long Answer Type Questions)

6

1. State and explain Ohm's law. Mention condition under which Ohm's law is applicable.

Or

Derive an expression for the equivalent resistance of three resistances connected in series and parallel.

(Short Answer Type Questions)

4 each

2. What is Reflection ? State the laws of reflection. Draw the suitable ray diagram.

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Turn Over

H-2

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(2)

Or

What is power of a lens ? Give *two* uses of concave mirrors.

3. Explain Myopia. How is it corrected ? Explain with diagram.

Or

Why do stars twinkle and planets do not ?

4. Draw ray diagram to show the formation of images when the object is placed in front of a concave mirror :

(i) Between its pole and focus point

(ii) On the centre of curvature

Or

Define magnification of a spherical mirror. State new Cartesian sign conventions of mirrors (Spherical).

(Very Short Answer Type Questions)

2 each

5. (i) State Fleming's left hand rule.

(ii) What are the advantages of nuclear energy ?

(iii) What is the difference between a convex lens and a concave lens ?

(Multiple Choice Questions)

1 each

6. (i) Defect Hypermetropia can be corrected by using :
- (A) Concave mirror
 - (B) Convex mirror
 - (C) Concave lens
 - (D) Convex lens
- (ii) The device used for producing current is called a :
- (A) Generator
 - (B) Galvanometer
 - (C) Ammeter
 - (D) Motor
- (iii) At the time of short circuit the current in the circuit :
- (A) Reduces substantially
 - (B) Does not change
 - (C) Increases heavily
 - (D) Vary continuously
- (iv) A solar water heater cannot be used to get hot water on :
- (A) A sunny day
 - (B) A cloudy day
 - (C) A hot day
 - (D) A windy day

Section-B

(CHEMISTRY)

(Long Answer Type Questions)

6

7. What is an homologous series ? Give its characteristics.

Or

What is Soap ? Explain mechanism of the cleansing action of soap.

(Short Answer Type Questions)

4 each

8. How we differentiate metals from non-metals ?

Or

What are Ores ? How are metals extracted from ores ? Write the various steps involved in the extraction.

9. Why do you think noble gases are placed in a separate group ?

Or

What is atomic radius ? How does the atomic radius of the element change in a group ?

10. Define combination reaction and decomposition reaction. Give an example of each.

Or

What do you mean by a chemical equation ? Give an example.

(Very Short Answer Type Questions)

2 each

11. (i) Give names and formula of *two* strong bases.
- (ii) What is the pH value of an acid on pH scale ? Give an example.
- (iii) Give *two* properties of Ethanol.

(Multiple Choice Questions)

1 each

12. (i) Which one of the following types of medicines is used for treating indigestion ?
- (A) Antibiotic
- (B) Analgesic
- (C) Antacid
- (D) Antiseptics
- (ii) Which one of the following processes involve chemical reaction ?
- (A) Storing of oxygen gas under pressure in a gas cylinder
- (B) Liquefaction of air
-
- (C) Keeping petrol in a China dish in the open
- (D) Heating copper wire in presence of air at high temperature
-

(6)

(iii) Galvanisation is a method of protecting iron from rusting by coating with a thin layer of :

- (A) Calcium
- (B) Aluminium
- (C) Zinc
- (D) Silver

(iv) An Alloy is :

- (A) An element
- (B) A compound
- (C) A homogeneous mixture
- (D) A heterogeneous mixture

Section-C

(LIFE SCIENCE)

(Long Answer Type Questions)

6

13. What is Nutrition ? What are the differences between autotrophic and heterotrophic nutrition ?

Or

What is Digestion ? Explain the process of digestion of food in

(Short Answer Type Questions)

4 eac

✓ 14. Draw the structure of a neuron and explain its function.

Or

✓ Design an experiment to demonstrate hydrotropism with requisite diagram.

15. Draw a neat, clean and labelled diagram of male reproductive system in human beings. <https://www.jkboseonline.com>

Or

✓ Explain the sexual reproduction in flowering plants with diagram (L.S. of flower).

16. How is the sex of the child determined in human beings ?

Or

What are the different ways in which individuals with a particular trait may increase in a population ?

(Very Short Answer Type Questions)

2 eac

17. (i) What are biodegradable substances ?

(ii) What is the role of decomposers in the ecosystem ?

(Multiple Choice Questions)

1 ea

18. (i) Deforestation generally decreases :
- (A) Rainfall ✓
 - (B) Soil erosion
 - (C) Drought
 - (D) Global warming
- (ii) Non-conventional sources of energy is :
- (A) Coal
 - (B) Wood
 - (C) Petroleum
 - (D) Biogas and Solar energy
- (iii) The anthers contain :
- (A) Sepals
 - (B) Ovules
 - (C) Carpels
 - (D) Pollen grains
- (iv) Which of the following is not a part of the female reproductive systems in human beings ?
- (A) Ovary
 - (B) Uterus
 - (C) Vas deferens ✓
 - (D) Fallopian tube

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