

N-4-C

Roll No.....

Total No. of Questions : 24]

[Total No. of Printed Pages : 8

XBAWZJ17

13604-C

SCIENCE

(Physics, Chemistry and Life Science)

Time : 3 Hours]

[Maximum Marks : 84

Section-A

(PHYSICS)

(Long Answer Type Questions)

1. What is Refraction ? Explain the process of refraction through a glass slab with suitable diagram.

Or

(a) Define magnification in case of lenses.

(b) A concave lens of focal length 15 cm forms an image at 10 cm.

from the lens. How far is the object placed from the lens ? 6

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Turn Over

(Short Answer Type Questions)

4 each

2. A person is not able to see far off objects clearly. Name the defect the person is suffering from. How is it corrected ? Draw the ray diagram.

Or

What is meant by scattering of light ? Explain Tyndall effect.

3. Define electric power. An electric heater of resistance 8 ohms draws 1.5 amperes current from the mains in two hours. Calculate the amount of heat produced.

Or

Define electric current. A current of 0.5 A is drawn by a filament for 10 minutes. Calculate the amount of charge that flows through the circuit.

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

Or

State the rules to determine :

- (a) Magnetic field produced around a straight conductor carrying current.
- (b) Force produced by a current carrying wire placed in between magnetic field.

(Very Short Answer Type Questions)

2 each

5. What is Biogas ? How is it produced ?
6. Write the properties of image formed by a plane mirror.
7. Define principal focus and focal length.

(Multiple Choice Questions)

1 each

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

(i) Amount of light that entering the eye depends upon the size of :

- | | |
|---|------------------------|
| <input checked="" type="checkbox"/> (a) pupil | (b) iris |
| (c) cornea | (d) vitreous humourous |

(ii) The device used to change the resistance in a circuit is called :

- | | |
|--|------------------|
| (a) Voltmeter | (b) Ammeter |
| <input checked="" type="checkbox"/> (c) Rheostat | (d) Galvanometer |

(iii) A good source of energy is one

- | |
|--|
| (a) which have high calorific value |
| (b) which is easily accessible |
| <input checked="" type="checkbox"/> (c) which is easy to store and transport |
| <input checked="" type="checkbox"/> (d) all the above |

(iv) The metals and alloys have resistivity in the range of :

- | | |
|---|--|
| (a) $10^{-8} \Omega\text{m} - 10^{-5} \text{ohm-m}$ | (b) $10^{-6} \Omega\text{m} - 10^{-8} \Omega\text{m}$ |
| (c) $10^{-8} \Omega\text{m} - 10^{-6} \Omega\text{m}$ | (d) $10^{-8} \Omega\text{m} - 10^{-12} \Omega\text{m}$ |

Section-B
(CHEMISTRY)

(Long Answer Type Questions)

9. How does ethanoic acid react with alcohols, bases, carbonates and bicarbonates ? Write equations for each reactions.

Or

Define covalent bond. Draw the electronic dot structures of ethanoic acid, hydrogen sulphide, propanone and fluorine.

6

(Short Answer Type Questions)

4 each

10. Why decomposition reactions are called the opposite of combination reactions ? Give examples and write equations of each reaction.

Or

What is a chemical equation ? How will you write a chemical equation ?

11. Explain the process of roasting. Illustrate your answer with examples.

Or

Differentiate between metal and non-metal on the bases of chemical properties (only four).

12. How do acids react with bases and metals ? Give the equations for each reaction.

Or

How sodium hydroxide is prepared ? Give the uses of sodium hydroxide.

(Very Short Answer Type Questions)

2 each

13. How many elements are present in third and fifth period of periodic table ?
14. What are two unique properties of carbon which lead to huge number of carbon compounds ?
15. Define refining of metals.

(Multiple Choice Questions)

1 each

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

(i) When iron nails are dipped in copper sulphate solution, its colour changes due to :

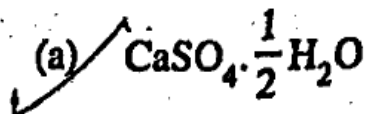
- (a) Oxidation
- ☒ (b) Displacement reaction
- (c) Decomposition reaction
- (d) Combination reaction

(ii) The compound propanal have functional group :

- (a) alcohol
- ☒ (b) aldehyde
- (c) ketone
- (d) carboxylic

Turn Over

(iii) The formula of plaster paris is



(iv) Percentage of acetic acid in vinegar is

(a) 25% acetic acid

(b) pure acetic acid

(c) 6-8% acetic acid

(d) 25% acetic acid

Section-C

(LIFE SCIENCE)

(Long Answer Type Questions)

17. Describe the process of digestion in man.

Or

Describe the structure and function of nephron and draw the well labelled diagram.

6

(Short Answer Type Questions)

4 each

18. Explain the function of forebrain.

Or

What is chemical co-ordination ? Write the three important plant hormones and their function.

19. Explain biological magnification. Will the levels of this magnification be different at different levels of magnification ?

Or

What are biodegradable and non-biodegradable substances ? Give two ways in which non-biodegradable substances would affect the environment.

20. Why do we need to manage our resources ? Write the two factors which affect our resources.

Or

Why should we conserve forests and wildlife ?

(Very Short Answer Type Questions)

2 each

21. Draw the diagram of female reproductive system in human beings.
22. Name the factors which lead to the rise of new species.
23. Why is D.N.A. copying an essential part for the process of reproduction ?

(Multiple Choice Questions)

1 each

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

- (i) The theory of evolution indicates that
(a) Man evolved from monkey
(b) Monkey evolved from man
(c) Man evolved from chimpanzee
(d) Both man and chimpanzee have common ancestor

Turn Over

- (ii) The embryo sac is found in :
- (a) endosperm
 - (b) embryo
 - ~~(c) ovule~~
 - (d) ovary
- (iii) Human evolution originated from :
- ~~(a) Africa~~
 - (b) China
 - (c) America
 - (d) France
- (iv) Fertilization in human beings occurs in :
- ~~(a) uterus~~
 - ☒ (b) fallopian tubes
 - (c) oviducts
 - (d) vagina