

H-3-0

Roll No.....

Total No. of Questions : 24]

[Total No. of Printed Pages : 8

XPJN16
11703-0
SCIENCE

(Physics, Chemistry and Life Science)

Time : 3 Hours]

[Maximum Marks : 84

Section-A

(PHYSICS)

(Long Answer Type Questions)

1. Draw the ray diagram and find position, nature and size of image formed by a convex lens when the object is placed between focus and twice the focus (f and $2f$).

Or

An object 5 cm in length is held 25 cm away from a converging lens of focal length 10 cm. Draw the ray diagram and find the position, size and the nature of image formed.

6

Turn Over

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(Short Answer Type Questions)

4 each

2. Define magnification of a spherical mirror. What will be the magnification in case of a plane mirror ?

Or

What are the Cartesian sign conventions used in spherical mirror ?

3. Explain in brief dispersion of light.

Or

Explain why the Sun appears red at sunrise and sunset ?

4. What is electric energy- ? What is its commercial unit ?

Or

Why are coils of electric toasters and electric irons made of an alloy rather than that of a pure metal ?

(Very Short Answer Type Questions)

2 each

5. What is the role of the split ring in an electric motor ?
6. What are the characteristics of an ideal fuel ?
7. How is a voltmeter connected in the circuit to measure potential difference between two points ?

(Multiple Choice Questions)

1 each

8. (i) Most insensitive part of the eye is called :
- (a) blind spot
 - (b) yellow spot
 - (c) cornea
 - (d) blue spot

- (ii) A solar heater cannot be used to get hot water on a :
- (a) Sunny day
 - (b) Cloudy day
 - (c) Hot day
 - (d) Windy day
- (iii) The space surrounding a magnet in which magnetic force is exerted is called :
- (a) Magnitude
 - (b) Direction
 - (c) Magnetic field
 - (d) None of these
- (iv) In electric motor, the direction of current in the coil changes once :
- (a) two rotations
 - (b) half rotation
 - (c) one rotation
 - (d) one-fourth rotation

Section-B

(CHEMISTRY)

(Long Answer Type Questions)

9. Describe the important chemical properties of carbon compounds. Illustrate answer with examples.

Or

Describe briefly the Physical and Chemical properties of Ethanoic acid.

6

(Short Answer Type Questions)

4 each

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

Or

What is Corrosion ? Give two ways to prevent corrosion of metals.

11. Write down any three chemical properties of non-metals.

Or

Why are decomposition reactions called opposite of combination reactions ? Write equations for these reactions.

12. What are the limitations in Mandeleef's periodic table ?

Or

How does the reactivity of the metals vary in a group ?

(Very Short Answer Type Questions)

2 each

13. Write an equation to show the reaction between Plaster of Paris and water.

14. Why are carbon and its compounds used as fuels for most applications ?

15. What do you mean by Refining of Metals ?

(Multiple Choice Questions)

1 each

16. (i) Formation of CuO from Copper and Oxygen denotes :
- (a) Deduction
 - (b) Oxidation
 - (c) Redox reaction
 - (d) None of these
- (ii) Plaster of Paris is made from :
- (a) Quick lime
 - (b) Slaked lime
 - (c) Gypsum
 - (d) Lime stone
- (iii) Which of the following is acidic in nature ?
- (a) Lime juice
 - (b) Human blood
 - (c) Lime water
 - (d) Antacid
- (iv) Which among the following is not a base ?
- (a) NaOH
 - (b) KOH
 - (c) NH_4OH
 - (d) $\text{C}_2\text{H}_5\text{OH}$

Section-C

(LIFE SCIENCE)

(Long Answer Type Questions)

17. Explain in brief the exchange of gases in Lungs.

Or

Describe in brief human alimentary canal with the help of a suitable diagram.

(Short Answer Type Questions)

4 ea

18. Explain the following :

(i) Hydrotropism

(ii) Chemotropism

Or

What are the functions of Auxins ?

19. What are the different methods of contraception ?

Or

How does reproduction help in providing stability to population of species ?

20. What evidence do we have for origin of life from inanimate ?

Or

How is equal genetic contribution of male and female parents ensured in the progeny ?

(Very Short Answer Type Questions)

2 each

21. Define Regeneration.

22. Why should we conserve forests ?

23. Write any two harmful effects of ozone depletion.

(Multiple Choice Questions)

1 each

24. (i) Importance of ecosystem lies in :

(a) flow of energy

(b) cycling of materials

(c) both (a) and (b)

(d) none of these

(ii) Which of the following constitute a food chain ?

(a) Grass, wheat and mango

(b) Grass, goat and human

(c) Goat, cow and elephant

(d) Grass fish and goat

Turn Over

(iii) Which of the following relates to multipurpose protected areas meant for conservation of wild-life ?

- (a) National parks
- (b) Biosphere reserves
- (c) Wild-life sanctuaries
- (d) None of these

(iv) Ground water will not be depleted due to :

- (a) Afforestation
- (b) Thermal power plants
- (c) Loss of forest and decreased rainfall
- (d) Cropping of high water demanding crops