A–5–Y

Roll No .....

Total No. of Questions : 40] [Total No. of Printed Pages : 15

10thARF(SZ)JKUT2024–25

105–Y

SCIENCE

Time : 3 Hours] **[Maximum Marks : 80**

Section–A 1 each

Note :- Q. Nos. **1** to **18** are very short answer type questions of 1 mark each.

1. Convex mirrors are commonly used as :

(A) Shaving mirror

(B) Rear-view mirror

(C) Headlight mirror

(D) All of these

2. When a fine beam of sunlight enters a smoke filled room through a small hole, the phenomenon is known as :

(A) Reflection of light

(B) Refraction of light

(C) Tyndall effect

(D) None of these

3. The common refractive defects of vision include Myopia, Hypermatropia and Presbyopia. Choose the correct match :

(A) Myopia—Farsightedness, Hypermatropia—Age related farsightedness, Presbyopia—Shortsightedness

(B) Myopia—Shortsightedness, Hypermatropia—Age related forsightedness, Presbyopia—Farsightedness

(C) Myopia—Shortsightedness, Hypermatropia—Farsightedness, Presbyopia—Age related farsightedness

(D) None of these match is correct

4. For flow of charges in a conducting metallic wire, the electrons move only if there is a difference of electric pressure, called the :

(A) Potential difference

(B) Resistance

(C) Power

(D) Both (A) and (B)

5. Which property of a proton can change while it moves freely in a magnetic field ?

(A) Mass and speed

(B) Speed and velocity

(C) Mass and momentum

(D) Velocity and momentum

6. A rectangular coil of copper wires is rotated in a magnetic field. The direction of the induced current changes once in each :

(A) Two revolutions

(B) One revolution

(C) Half revolution

(D) One-fourth revolution

7. $NaCl + AgNO_3 \longrightarrow AgCl + NaNO_3$

The above reaction is a :

(A) Displacement reaction

(B) Double displacement reaction

(C) Combination reaction

(D) None of these

8. Metals can be beaten into thin sheets. This property is called :

(A) Metallic luster

(B) Malleability

(C) Ductility

(D) Conductivity

9. Which of the following methods is suitable for preventing an iron frying pan from rusting ?

(A) Aplying grease

(B) Applying paint

(C) Applying coating of zinc

(D) All of these

10. Bee sting contains which acid :

(A) Ethanoic acid

(B) Formic acid

(C) Oxalic acid

(D) Citric acid

11. Which of the following types of medicine is used for treating acidity in stomach ?

(A) Antibiotic

(B) Antacid

(C) Analgesic

(D) Antiseptic

12. Autotrophic nutrition involves :

(A) Intake of simple inorganic material from the environment

(B) Using external energy source like the sun

(C) Intake of complex material prepared by other organisms

(D) Both (A) and (B)

13. Which plant hormone inhibits (stops) growth in plants ?

(A) Cytokinin

(B) Auxin

(C) Abscisic acid

(D) Gibberellins

14. An example of homologous organ is :

(A) Our arm and a dog's fore arm

(B) Our teeth arid and elephant's tusks

(C) Potato and runners of grass

(D) All of these

15. The use of which chemical has endangered the ozone layer ?

(A) Pesticides

(B) CFC's

(C) Insecticides

(D) None of these

Note :- From Q. Nos. **16** to **18**, two statements (Assertion–A and Reason–R) are given. Select the correct statement/answer to these questions from the codes A, B, C and D as given below :

Codes :

(A) When A and R are true and R is the correct explanation of A.

(B) When A and R are true but R is not the correct explanation of A.

(C) When A is true but R is false.

(D) When A is false but R is true.

16. **Assertion (A) :** The two characteristic features seen in carbon, that is tetravalency and catenation.

Reason (R) : Carbon atom has four valence electrons in its outermost shell which makes it possible to form large number of compounds.

17. **Assertion (A) :** Pollen grains from the carpel stick to the stigma of stamen.

Reason (R) : The fertilized egg cells grow inside the ovules and become seeds.

18. **Assertion (A) :** Ddcomposers act as cleaning agents of the environment.

Reason (R) : The decomposers recycle waste material in the hydrosphere.

Section–B

2 each

***Note* :–** There will be *ten* questions in this Section (Q. Nos. **19** to **28**) each of 2 marks.

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

20. What do you mean by resistors connected in series ?

21. Why don't two magnetic lines of force intersect each other ?

22. Why should magnesium ribbon be cleaned before burning in air ?

23. Write down the structural formula of :

(i) Propane

(ii) Butane

24. Give an example of each of a metal which :

(a) is a liquid at room temperature

(b) can be easily cut with a knife

25. How is the small intestine designed to absorb digested food ?

26. Why is the use of iodised salt advisable ?

27. How does binary fission differ from multiple fission ?

28. How does the creation of variations in a species promote survival ?

Section–C

3 each

Note :– In this Section from Q. Nos. **29** to **37**, there will be *nine* questions with internal choice, each of 3 marks.

29. Draw the three ray diagrams for the correction of hypermatropic eye.

Or

(i) What is the far point and near point of the human eye with normal vision ?

(ii) What is meant by power of accommodation of the eye ?

30. Will current flow more easily through a thick wire or a thin wire of the same material, when connected to the same source ? Give reasons in support of your answer.

Or

The potential difference between the terminals of an electric heater is 60 V when it draws a current of 4 A from the source. What current will the heater draw if the potential difference is increased to 120 V ?

31. (i) What is Right hand thumb rule ?

(ii) Draw magnetic field lines around a bar magnet.

Or

(i) What is the function of an earth wire ?

(ii) When does an electric short circuit occur ?

32. Write a balanced equation with state symbols for the following :

(a) Barium chloride and sodium sulphate in water react to give insoluble barium sulphate and sodium chloride solution.

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

Or

Describe Displacement reaction with two examples.

33. Write down a note on Aqua Regia.

Or

Write down *three* properties of ionic compounds.

34. What is an alkali ? Write down *two* properties of alkali.

Or

Write down *three* uses of Washing Soda.

35. Write down the names of different parts of human brain. Draw the labelled diagram of human brain.

Or

Write down the functions of the following human hormones :

(i) Thyroxin

(ii) Adrenaline

36. What is the importance of DNA copying in Reproduction ?

Or

What are the different methods of contraception ?

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

Or

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

Section–D

5 each

Note :– In this Section from *Q.* Nos. **38** to **40**, there will be *three* long answer type questions with internal choice, each of 5 marks.

38. 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 nature of the image formed.

Or

Describe the mirror formula and magnification in spherical mirrors.

39. (i) Explain the mechanism of cleaning action of soaps.

(ii) Explain the formation of scum when hard water is treated with soap.

Or

How can ethanol and ethanoic acid be differentiated on the basis of their physical and chemical properties ?

40. (i) What is the role of saliva in the digestion of food ?

(ii) How are fats digested in our body ?

Or

(i) How is oxygen and carbon dioxide transported in human body ?

(ii) What would be the consequences of a deficiency of haemoglobin in our bodies ?