

D-5-A

Roll No.....

Total No. of Questions : 40]

[Total No. of Printed Pages : 16]

10thARA(HZ)JK/LEHUT2024

1305-A

SCIENCE

Time : 3 Hours]

[Maximum Marks : 80]

Section-A

Note :- Q. Nos. 1 to 18 are very very short answer type questions/

MCQ of 1 mark each.

1. The refractive index of water is :

(A) 1.44

(B) 1.47

(C) 1.33

(D) 1.50

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Turn Over

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2. When the ciliary muscles present in the eye are relaxed the lens

becomes thin. Its focal length :

(A) Decreases

(B) Increases

(C) Remains the same

(D) Both (B) and (C)

3. The human eye forms the image of an object at its :

(A) Cornea

(B) Retina

(C) Eye lens

(D) Iris

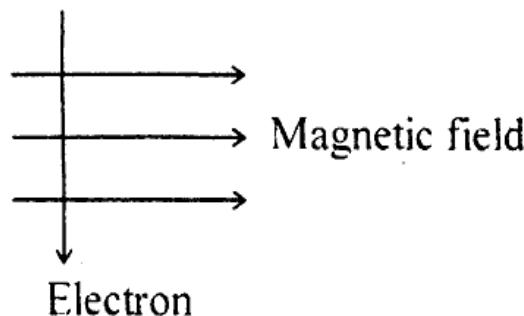
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4. An electronic charge on a body produces :

- (A) A magnetic field only
- (B) Electric field only
- (C) Both of them
- (D) None of these

5. An electron enters a magnetic field at right angles to it as shown in figure :



According to Fleming's left hand rule, what will be the direction of force on the electron ?

- (A) To the right
- (B) To the left
- (C) Out of the page
- (D) Into the page

(4)

6. On heating gypsum at 373 K, the product formed is called :

- (A) Sodium bicarbonate
- (B) Calcium carbonate
- (C) Calcium sulphate hemihydrate
- (D) Calcium oxychloride

7. Butanone is a four-carbon compound with the functional group :

- (A) Carboxylic acid
- (B) Aldehyde
- (C) Ketone
- (D) Alcohol

8. Give the equation for the reaction of zinc with sodium hydroxide.

9. Why is table salt called Iodized salt ?

10. The pH of soil for healthy growth of plants should neither be alkaline nor highly acidic. (True/False)

11. is the main thinking part of the brain.

(A) Fore brain

(B) Mid brain

(C) Hind brain

(D) Both (A) and (C)

(Choose the correct one and fill up)

12. The pollen needs to be transferred from the stamens to the stigma.
When it happens in the same flower, it is called :

- (A) Cross pollination
- (B) Self pollination
- (C) Fertilization
- (D) Both (A) and (C)

13. The anther contains :

- (A) Sepals
- (B) Ovules
- (C) Carpel
- (D) Pollen grain

14. Which of the following constitutes a food chain ?

(A) Grass, Wheat and Mango

(B) Grass, Goat and Human

(C) Goat, Cow and Elephant

(D) Grass, Fish and Goat

15. Ozone is depleted by :

(A) Methane

(B) Chlorofluorocarbons

(C) Carbon dioxide

(D) Hydrogen sulphide

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

Codes :

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

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

(C) A is true but R is false.

(D) A is false but R is true.

16. **Assertion (A) :** No two magnetic field lines are found to cross each other.

Reason (R) : At the point of intersection, the compass needle would point towards two directions, which is not possible.

17. Assertion (A) : The rusting of iron can be prevented by painting,

oiling, greasing etc.

Reason (R) : Painting, oiling and greasing forms a protective layer over the Iron metal.

18. Assertion (A) : When we eat something we like, our mouth waters.

Reason (R) : The saliva helps in swallowing of food.

Section-B

Note :- There will be ten questions in this Section (Q. Nos. 19 to 28)

each of 2 marks.

19. A concave lens of 20 cm focal length forms an image 15 cm from the lens. Calculate the object distance.

20. Define Ohm's law and draw its circuit diagram.

21. What is Fleming's left hand rule ?

22. Define the terms oxidation and reduction.

23. What are covalent bonds ?

24. What are the ingredients of baking soda ?

25. What is meant by Heterotrophic mode of nutrition ?

26. What is difference between Breathing and Respiration ?

27. Name the parts of a flower.

28. Write two secondary sexual characters in human males.

Section-C

Note :- There will be *nine* questions (SAQs) with internal and parallel choice from Q. Nos. **29** to **37** of 3 marks.

29. Write down at least *three* uses of Electromagnets.

Or

Compare electromagnet with a permanent magnet.

30. Describe Dispersion of white light by a glass prism.

Or

Describe how stars appear twinkling at night.

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

Or

An electric iron rod of resistance 20Ω takes a current of 5A.

Calculate the heat developed in 30 seconds.

32. What are the effects of oxidation in everyday life ?

Or

Explain the terms Corrosion and Rancidity.

33. Explain how the metals towards the top of the reactivity series are extracted from their compounds ?

Or

Describe Galvanisation and Alloying as methods that prevent corrosion of metals.

34. Why should curd and sour substances not be kept in brass and copper vessels ?

Or

While diluting an acid, why is it recommended that acid should be added to water and not water to acid ?

35. How are fats digested in our bodies ?

Or

How are the alveoli designed to maximize the exchange of gases ?

36. Write the names of the components of DNA.

Or

What is the chemical nature of Gene ? Where are the genes located ? <https://www.jkboseonline.com>

37. What are trophic levels ? Give an example of food chain and state the different trophic levels in it.

Or

What is biological magnification ? Will the levels of this magnification be different at different levels ?

Section-D

Note :- There will be three Long Answer Type Questions with internal choice (each of 5 marks) from Q. Nos. 38 to 40.

38. What will be the nature, position and relative size of the image formed by a convex lens for the following positions of the object ?

- (a) When object is at infinity.
- (b) When object is beyond $2F_1$.
- (c) When object is at $2F_1$.
- (d) When object is between $2F_1$ and F_1 .
- (e) When object is between F_1 and O.

(Diagram is optional)

$1 \times 5 = 5$

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Or

Describe the process of Refraction through a Rectangular glass slab

with proper diagram.

5

39. What is a homologous series ? Explain with examples.

3+2=5

Or

Give a test that can be used to differentiate chemically between butter

and cooking oil. Explain the mechanism of the cleaning action of

soaps.

3+2=5

40. What is Photosynthesis ? Write down different steps or events that

occur during the process of photosynthesis.

5

Or

(i) What are plant hormones ?

2

(ii) Name two plant hormones that promote growth.

1

(iii) How do auxins promote growth of a tendril around a support ?

2

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