KSEEB Class 10 Previous Year Science Question Paper 2020

ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 12]

Total No. of Printed Pages : 12]

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 38]

Total No. of Questions : 38]

ಸಂಕೇತ ಸಂಖ್ಯೆ : 83-E

Code No. : 83-E

CCE RF
CCE RR
REVISED

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತಶಾಸ್ತ್ರ, ರಸಾಯನಶಾಸ್ತ್ರ ಮತ್ತು ಜೀವಶಾಸ್ತ್ರ / Physics, Chemistry & Biology)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

(ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ & ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Fresh & Regular Repeater)

ದಿನಾಂಕ : 30. 03. 2020] [Date : 30. 03. 2020

ಸಮಯ : ಬೆಳಗ್ಗೆ 9-30 ರಿಂದ ಮಧ್ಯಾಹ್ನ–12-45 ರವರೆಗೆ] [Time : 9-30 A.M. to 12-45 P.M.

ಗರಿಷ್ಠ ಅಂಕಗಳು : 80] [Max. Marks : 80

General Instructions to the Candidate :

1. This Question Paper consists of 38 objective and subjective types of questions.
2. This question paper has been sealed by reverse jacket. You have to cut on the right side to open the paper at the time of commencement of the examination. Check whether all the pages of the question paper are intact.
3. Follow the instructions given against both the objective and subjective types of questions.
4. Figures in the right hand margin indicate maximum marks for the questions.
5. The maximum time to answer the paper is given at the top of the question paper. It includes 15 minutes for reading the question paper.

I. *Four* alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. $8 \times 1 = 8$

1. The inner surface of solar cooker is coated with black paint to

   (A) absorb more heat (B) reflect light

   (C) prevent rusting (D) converge the light rays.

2. As the pH value of a neutral solution increases

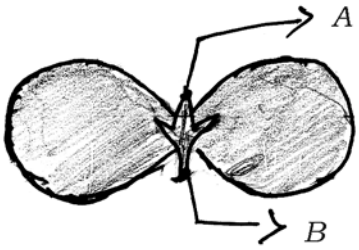
   (A) basic property decreases and number of OH^- ions increases

   (B) acidic property increases and number of H^+ ions decreases

   (C) basic property increases and number of OH^- ions increases

   (D) acidic property decreases and number of H^+ ions increases.

3. In the given figure of Cotyledon the parts labelled as *A* and *B* respectively are



   (A) fruit, shoot

   (B) primary shoot, primary root

   (C) secondary root, primary shoot

   (D) bud, leaf.

4. An object is kept at the centre of curvature of a concave mirror. The position and nature of the image formed is

(A) between *F* and *C* and inverted

(B) behind the mirror and erect

(C) between *F* and *P* and erect

(D) at the centre of curvature and inverted.

5. The power plant in which natural source of energy is directly used to rotate turbines is

(A) thermal power plant

(B) hydro-electric power plant

(C) nuclear power plant

(D) solar power plant.

6. An example for saturated hydrocarbon is

(A) C_2H_6

(B) C_3H_4

(C) C_2H_2

(D) C_2H_4.

7. The incorrect statement related to thyroxine hormone among the following is

(A) it regulates fat metabolism

(B) its deficiency leads to goitre

(C) it is secreted by parathyroid gland

(D) iodine in the food is essential for its production.

8. The molecular formula of three carbon compounds which are in homologous series are C_2H_6, C_3H_8, C_4H_{10}. The suitable general formula for these compounds is

(A) C_nH_{2n}

(B) C_nH_{2n-1}

(C) C_nH_{2n-2}

(D) C_nH_{2n+2}.

II. Answer the following questions. $8 \times 1 = 8$

9. An iron ring is to be coated with copper. How can we do this without using electricity ?

10. What is the SI unit of potential difference ? Name the device used to measure the potential difference.

11. "The rate of breathing in aquatic organisms is much faster than that seen in terrestrial organisms." Why ?

12. Sodium and potassium are placed in the same group of modern periodic table. If the molecular formula of sodium sulphate is Na_2SO_4, then decide the molecular formula of potassium sulphate. Give reason for your answer.

13. "Biogas plant is a boon to farmers." Why ?

14. The gene for brown coloured hair is recessive over gene for black coloured hair. What is the hair colour of a person who has inherited a gene for brown coloured hair from mother and black coloured hair from father ?

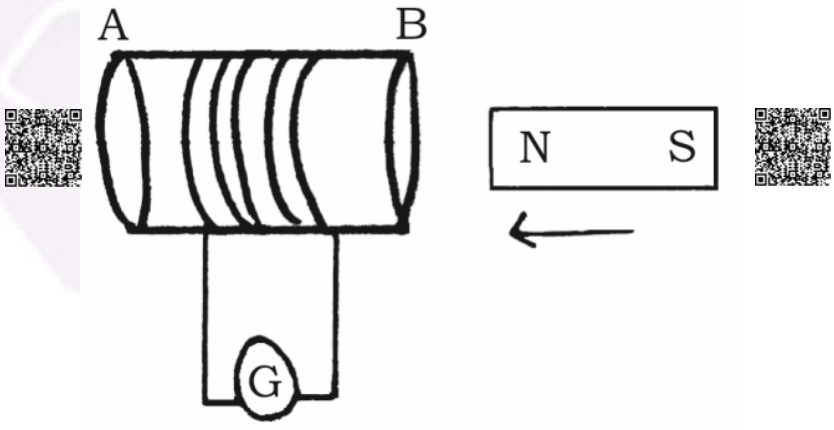
15. $CuO + H_2 \rightarrow Cu + H_2O$

In this reaction name the reactant

i) that is oxidised

ii) that is reduced.

16. Observe the given figure.



What type of current is induced in the coil by doing the experiment related to this figure ? Give reason for your answer.

III. Answer the following questions. $8 \times 2 = 16$

17. Agricultural scientists have suggested to add a certain amount of lime powder to an agricultural field. What may be the reasons for this ? Explain.

18. "The body temperature of frogs and lizards depend on temperature in the environment." Justify.

19. Draw the diagram of the apparatus to show that acid solution in water conducts electricity. Label the following parts :

i) Dil. HCl solution

ii) Rubber cork.

OR

Draw the diagram of arrangement of the apparatus to show the reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning. Label the following parts :

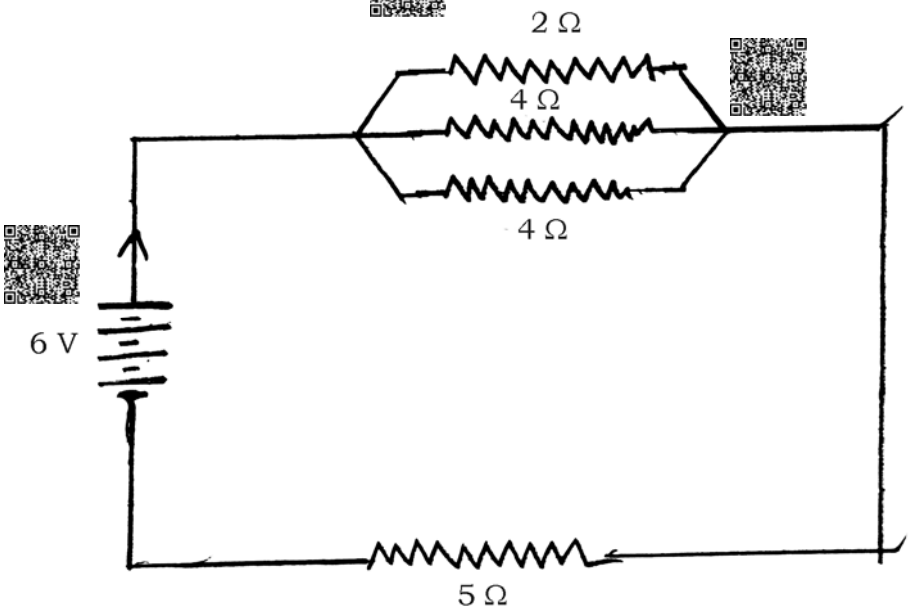
i) Test tube

ii) Soap solution.

20. The resistivity of manganese wire of length 1 m is $1{\cdot}84 \times 10^{-6}$ Ω m at 20°C. If the diameter of the wire is 3×10^{-4} m, what will be the resistance of the wire at that temperature ?

OR

Observe the given circuit :



Calculate the total resistance in the circuit and the total current flowing in the circuit.

21. "As energy moves progressively through various trophic levels of food chain it is no longer available to the previous level." Give reasons.

22. Which physical properties of metals are used in the following situations ?

    i) Gold is used to make ornaments

    ii) Nickel is used in strings of guitar.

23. Draw the diagram showing the germination of pollen on stigma and label the pollen tube.

24. Draw the diagram of a simple electric generator. Label the following parts :

    i) Brushes

    ii) Rings.

IV. Answer the following questions. $9 \times 3 = 27$

25. State Joule's law of heating. Explain the working of electric filament bulb.

OR

State Ohm's law. How ammeter and voltmeter should be connected in electric circuit ? What is the use of these instruments, in the circuit ?

26. The reaction of Barium chloride with Aluminium sulphate solution is an example for which type of chemical reaction ? Why ? Write the balanced chemical equation for this reaction.

27. Explain the significant function of each structure in human male reproductive system.

OR

Explain the structure and important role of placenta during pregnancy period of woman.

28. Explain the addition and substitution reaction with the help of examples. C_2H_6 undergoes substitution reaction but not addition reaction. Why ?

OR

Explain how soap cleans clothes. More amount of soap is required to clean the clothes in hard water. Why ?

29. "Building crescent shaped earthen embankment in level terrain is better than the construction of large dams across the river to store water." Analyse this statement with their effects.

30. An object is kept on the principal axis of a concave mirror of focal length 12 cm. If the object is at a distance of 18 cm from the mirror, calculate the image distance. Determine the nature of the image formed by calculating the magnification produced by the mirror.

OR

A doctor prescribes a corrective lens of power – 0·5 D to a person. Find the focal length of the lens. Is this lens diverging or converging ? Give reason. How does the property of this lens can be used to correct eye defects ?

31. Draw the diagram showing the schematic sectional view of the human heart. Label the following parts :

i) Aorta

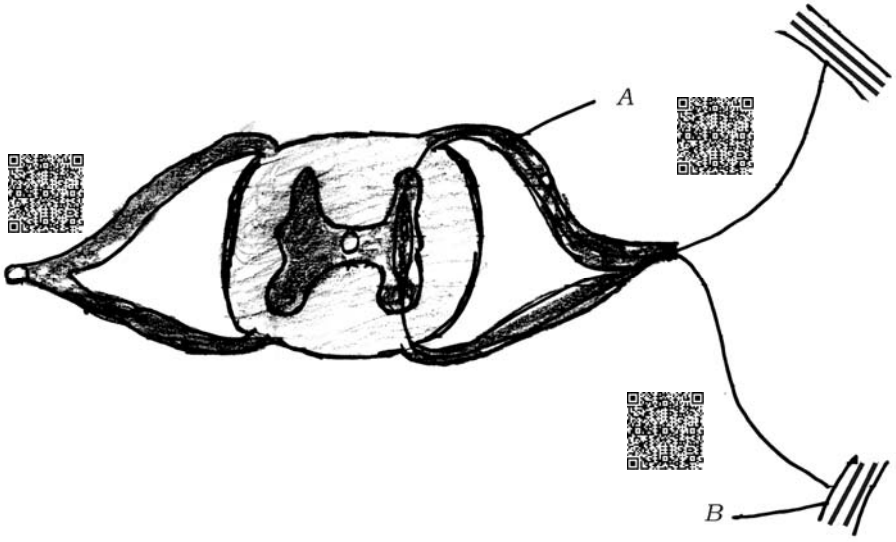
ii) Pulmonary veins.

32. Draw the ray diagram when the object is kept between F_1 and $2F_1$ of the convex lens. With the help of the diagram mention the position and nature of the image formed. [F_1 : Principal focus of the lens]

33. The atomic numbers of two elements are 8 and 16 respectively. Write the electronic configuration of these two elements. Do you keep these two elements in the same group of the modern periodic table ? Justify your answer. Find out which of these two elements is more electronegative. Give reason for your answer.

V. Answer the following questions. $4 \times 4 = 16$

34. Name the given structure. What is its general function ? Mention the function of the parts labelled as *A* and *B*. These structures in animals are said to be more efficient to give quick responses. Why ?



35. Mention the difference between calcination and roasting. How these processes are used in the extraction of zinc ? Explain with the help of chemical equations. After these processes, is reduction necessary to obtain zinc ? Why ?

36. How do you trace the magnetic field lines around a bar magnet using compass needle ? Explain. Write the properties of magnetic field lines.

37. The plants bearing round yellow coloured (*RrYy*) seeds are self pollinated. Represent the result obtained in the F_2 generation of dihybrid cross with the help of a checker board. Mention the varieties of plants obtained in F_2 generation.

OR

What is evolution ? Explain the three evidences for evolution.

VI. Answer the following question. $1 \times 5 = 5$

38. Explain the experiment conducted by Newton to show that white light contains seven colours. Sun appears red in colour during sunrise but appears white at noon. Explain with the reasons.

ಕರ್ನಾಟಕ ಪ್ರೌಢ ಶಿಕ್ಷಣ ಪರೀಕ್ಷಾ ಮಂಡಳಿ, ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು – 560 003

KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD, MALLESWARAM, BANGALORE – 560 003

ಪತ್ರಿಕೆ - 01 / Paper – 01

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಮುಖ್ಯ ಪರೀಕ್ಷೆ – 2021

SSLC MAIN EXAMINATION – 2021

ವಿಷಯ : ಗಣಿತ + ವಿಜ್ಞಾನ + ಸಮಾಜ ವಿಜ್ಞಾನ

Subjects : MATHEMATICS + SCIENCE + SOCIAL SCIENCE

(ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / Kannada and English Medium)

(CCE-RF / CCE-RR / CCE-PF / CCE-PR / NSR / NSPR)

ಉತ್ತರಗಳ ಸಂಕೇತ

KEY ANSWERS

ಸಂಕೇತ ಸಂಖ್ಯೆ : 83-K/E **Code No. : 83-K/E**

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 40 + 40 + 40 = 120] [Total No. of Questions : 40 + 40 + 40 = 120

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

ಈ ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗಳಿಗೆ ಅಥವಾ ಅಪೂರ್ಣ ಹೇಳಿಕೆಗಳಿಗೆ ನಾಲ್ಕು ಆಯ್ಕೆಗಳನ್ನು ನೀಡಲಾಗಿದೆ. ಅವುಗಳಲ್ಲಿ ಸರಿಯಾದ ಉತ್ತರವನ್ನು ಆರಿಸಿ ನಿಮಗೆ ನೀಡಲಾಗಿರುವ ಓ.ಎಂ.ಆರ್. (OMR) ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ನೀಲಿ ಅಥವಾ ಕಪ್ಪು ಶಾಯಿಯ ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್‌ನಿಂದ ಸರಿಯಾದ ಆಯ್ಕೆಯನ್ನು ಶೇಡ್ ಮಾಡಿರಿ : 40 × 1 = 40

Four choices are given for each of the following questions / incomplete statements. Choose the correct answer and shade the correct option in the OMR Answer Sheet given to you with a black / blue ball point pen. 40 × 1 = 40

41. ವಿದ್ಯುತ್ಕಾಂತೀಯ ಪ್ರೇರಣೆಯ ತತ್ವದ ಆಧಾರದ ಮೇಲೆ ಕಾರ್ಯನಿರ್ವಹಿಸುವ ಸಾಧನ

(A) ವಿದ್ಯುತ್‌ಜನಕ (B) ವಿದ್ಯುತ್ ಹೀಟರ್

(C) ವಿದ್ಯುತ್ ಮೋಟಾರ್ (D) ವಿದ್ಯುತ್ ಫ್ಯಾನ್

ಉತ್ತರ: (A) ವಿದ್ಯುತ್‌ಜನಕ

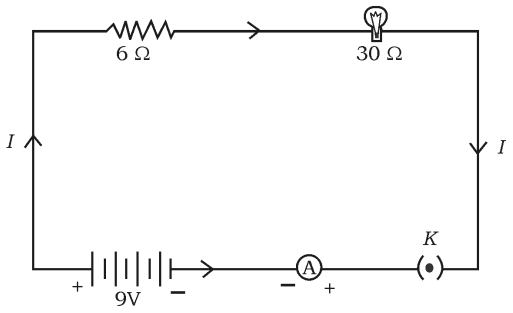
The device that works on the principle of electromagnetic induction is

(A) electric generator (B) electric heater

(C) electric motor (D) electric fan

Ans. : (A) electric generator

42. 30 Ω ರೋಧ ಹೊಂದಿರುವ ಒಂದು ವಿದ್ಯುತ್‌ದೀಪ ಮತ್ತು 6 Ω ರೋಧವನ್ನು ಹೊಂದಿರುವ ವಾಹಕವನ್ನು ಸರಣಿಯಲ್ಲಿ 9V ನ ಶುಷ್ಕಕೋಶಕ್ಕೆ ಚಿತ್ರದಲ್ಲಿರುವಂತೆ ಜೋಡಿಸಲಾಗಿದೆ. ಮಂಡಲದಲ್ಲಿ ಪ್ರವಹಿಸುತ್ತಿರುವ ಒಟ್ಟು ವಿದ್ಯುತ್‌ಪ್ರವಾಹ

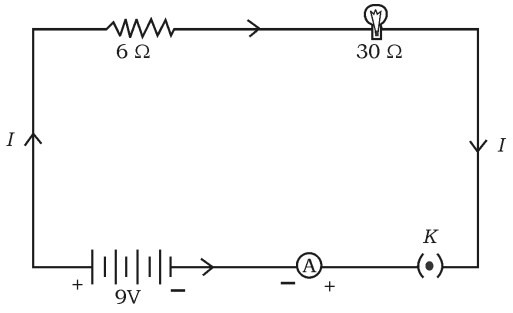


(A) 4 A (B) 36 A

(C) 0.25 A (D) 0.6 A

ಉತ್ತರ: (C) 0.25 A

An electric lamp whose resistance is 30 Ω and a conductor of 6 Ω resistance are connected in series to 9V battery as shown in the figure. The total current flowing in the circuit is



(A) 4 A (B) 36 A

(C) 0.25 A (D) 0.6 A

Ans. : (C) 0.25 A

43. ಸೌರಕುಕ್ಕರ್‌ನ ಒಳಭಾಗಕ್ಕೆ ಕಪ್ಪುಬಣ್ಣವನ್ನು ಬಳಿಯಲು ಕಾರಣ ಇದು

(A) ಬೆಳಕನ್ನು ಪ್ರತಿಫಲಿಸುತ್ತದೆ (B) ಸೌರಕಿರಣಗಳನ್ನು ಕೇಂದ್ರೀಕರಿಸುತ್ತದೆ

(C) ತುಕ್ಕು ಹಿಡಿಯುವುದನ್ನು ತಡೆಗಟ್ಟುತ್ತದೆ (D) ಹೆಚ್ಚು ಶಾಖವನ್ನು ಹೀರಿಕೊಳ್ಳುತ್ತದೆ

ಉತ್ತರ: (D) ಹೆಚ್ಚು ಶಾಖವನ್ನು ಹೀರಿಕೊಳ್ಳುತ್ತದೆ

The inner wall of the solar cooker is painted black because this

(A) reflects light (B) converges solar radiations

(C) prevents from rusting (D) absorbs more heat

Ans. : (D) absorbs more heat

44. ವಿದ್ಯುತ್‌ಬಲ್ಬ್‌ನ ತಂತುಗಳಲ್ಲಿ ಬಳಸುವ ಲೋಹ

(A) ಮ್ಯಾಂಗನೀಸ್ (B) ಟಂಗಸ್ಟನ್

(C) ನಿಕ್ಕಲ್ (D) ಕ್ರೋಮಿಯಂ

ಉತ್ತರ: (B) ಟಂಗಸ್ಟನ್

The metal used in the filament of an electric bulb is

(A) manganese (B) tungsten

(C) nickel (D) chromium

Ans. : (B) tungsten

45. ತಾಮ್ರದ ಆಯತಾಕಾರದ ತಂತಿಯ ಸುರುಳಿಯನ್ನು ಕಾಂತಕ್ಷೇತ್ರದಲ್ಲಿ ತಿರುಗಿಸಿದಾಗ ಪ್ರೇರಿತ ವಿದ್ಯುತ್ ಪ್ರವಾಹದ ದಿಕ್ಕು ಪ್ರತಿಬಾರಿ ಬದಲಾಗುವುದು

(A) ಎರಡು ಸುತ್ತುಗಳಿಗೊಮ್ಮೆ (B) ಒಂದು ಸುತ್ತಿಗೊಮ್ಮೆ

(C) ಅರ್ಧ ಸುತ್ತಿಗೊಮ್ಮೆ (D) ನಾಲ್ಕನೇ ಒಂದು ಸುತ್ತಿಗೊಮ್ಮೆ

ಉತ್ತರ: (C) ಅರ್ಧ ಸುತ್ತಿಗೆ

A rectangular coil of copper wire 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

Ans. : (C) half revolution

46. ಒಂದು ಮಸೂರದ ಸಂಗಮದೂರವು + 0·50 m ಆದರೆ ಮಸೂರದ ಸಾಮರ್ಥ್ಯ ಮತ್ತು ವಿಧ

(A) + 2·0 D ಮತ್ತು ಪೀನ ಮಸೂರ (B) + 2·0 D ಮತ್ತು ನಿಮ್ನ ಮಸೂರ

(C) – 2·0 D ಮತ್ತು ನಿಮ್ನ ಮಸೂರ (D) – 2·0 D ಮತ್ತು ಪೀನ ಮಸೂರ

ಉತ್ತರ: (A) + 2·0 D ಮತ್ತು ಪೀನ ಮಸೂರ

The focal length of a lens is + 0.50 m. The power of the lens and type are

(A) + 2.0 D and convex lens (B) + 2.0 D and concave lens

(C) – 2.0 D and concave lens (D) – 2.0 D and convex lens

Ans. : (A) + 2.0 D and convex lens

47. ವಿದ್ಯುತ್‌ಮಂಡಲದಲ್ಲಿ ರೋಧವನ್ನು ಬದಲಾಯಿಸಲು ಬಳಸುವ ಸಾಧನ

(A) ವೋಲ್ಟ್‌ಮೀಟರ್ (B) ಆಮ್ಮೀಟರ್

(C) ಗ್ಯಾಲ್ವನೋಮೀಟರ್ (D) ರಿಯೋಸ್ಟಾಟ್

ಉತ್ತರ: (D) ರಿಯೋಸ್ಟಾಟ್

A device used to change the resistance in the electric circuit is

(A) voltmeter (B) ammeter

(C) galvanometer (D) rheostat

Ans. : (D) rheostat

48. ಒಂದು ಸೊಲೆನಾಯ್ಡ್‌ನ ಒಳಭಾಗದಲ್ಲಿ ಕಾಂತೀಯ ಬಲರೇಖೆಗಳು ಸಮಾಂತರ ಸರಳರೇಖೆಗಳಂತೆ ಇರುತ್ತವೆ. ಇದಕ್ಕೆ ಕಾರಣ ಸೊಲೆನಾಯ್ಡ್‌ನ ಒಳಭಾಗದಲ್ಲಿ ಕಾಂತಕ್ಷೇತ್ರವು

(A) ಅತ್ಯಂತ ಹೆಚ್ಚಾಗಿರುತ್ತದೆ (B) ಏಕರೂಪವಾಗಿರುತ್ತದೆ

(C) ಸೊನ್ನೆಯಾಗಿರುತ್ತದೆ (D) ವಿದ್ಯುತ್‌ಪ್ರವಾಹದಿಂದ ಉಂಟಾಗಿರುತ್ತದೆ

ಉತ್ತರ: (B) ಏಕರೂಪವಾಗಿರುತ್ತದೆ

The magnetic field lines inside a solenoid are in the form of parallel straight lines. The reason for this is, the magnetic field inside the solenoid is

(A) very high (B) uniform

(C) zero (D) produced by electric current

Ans. : (B) uniform

49. ಒಂದು ವಸ್ತುವನ್ನು ಪೀನ ಮಸೂರದ ಪ್ರಧಾನ ಸಂಗಮ F_1 ಮತ್ತು ದೃಕ್‌ಕೇಂದ್ರ O ಗಳ ನಡುವೆ ಇರಿಸಿದಾಗ ಉಂಟಾಗುವ ಪ್ರತಿಬಿಂಬದ ಸ್ವಭಾವ ಮತ್ತು ಗಾತ್ರ

(A) ಮಿಥ್ಯ, ನೇರ ಮತ್ತು ದೊಡ್ಡದಾಗಿರುತ್ತದೆ (B) ಸತ್ಯ, ತಲೆಕೆಳಗಾದ ಮತ್ತು ಚಿಕ್ಕದಾಗಿರುತ್ತದೆ

(C) ಮಿಥ್ಯ, ತಲೆಕೆಳಗಾದ ಮತ್ತು ಚಿಕ್ಕದಾಗಿರುತ್ತದೆ (D) ಸತ್ಯ, ತಲೆಕೆಳಗಾದ ಮತ್ತು ದೊಡ್ಡದಾಗಿರುತ್ತದೆ

ಉತ್ತರ: (A) ಮಿಥ್ಯ, ನೇರ ಮತ್ತು ದೊಡ್ಡದಾಗಿರುತ್ತದೆ

The nature and the size of the image formed when an object is kept between the principal focus F_1 and optical centre *O* of a convex lens are

(A) virtual, erect and enlarged (B) real, inverted and small size

(C) virtual, inverted and small size (D) real, inverted and enlarged

Ans. : (A) virtual, erect and enlarged

50. ವಿದ್ಯುತ್‌ಶಕ್ತಿಯನ್ನು ಯಾಂತ್ರಿಕ ಶಕ್ತಿಯಾಗಿ ಪರಿವರ್ತಿಸುವ ಸಾಧನ

(A) ವಿದ್ಯುತ್‌ಜನಕ (B) ಸೌರಕೋಶ

(C) ಶುಷ್ಕಕೋಶ (D) ವಿದ್ಯುತ್‌ಮೋಟಾರ್

ಉತ್ತರ: (D) ವಿದ್ಯುತ್‌ಮೋಟಾರ್

The device that converts electrical energy into mechanical energy is

(A) electric generator (B) solar cell

(C) dry cell (D) electric motor

Ans. : (D) electric motor

51. 'ಓಮ್' ಎಂಬುದು ಇದರ SI ಏಕಮಾನವಾಗಿದೆ

(A) ವಿದ್ಯುತ್ ವಿಭವಾಂತರ (B) ರೋಧ

(C) ವಿದ್ಯುತ್ ಪ್ರವಾಹ (D) ವಿದ್ಯುದಾವೇಶ

ಉತ್ತರ: (B) ರೋಧ

'Ohm' is the SI unit of

(A) electric potential difference (B) resistance

(C) electric current (D) electric charge

Ans. : (B) resistance

52. ಕೆಳಗಿನ ಕೋಷ್ಟಕವನ್ನು ಗಮನಿಸಿ :

ದ್ರವ್ಯಮಾಧ್ಯಮ	ವಕ್ರೀಭವನ ಸೂಚ್ಯಂಕ
P	1·52
Q	1·44
R	2·42
S	1·33

ಯಾವ ದ್ರವ್ಯಮಾಧ್ಯಮದಲ್ಲಿ ಬೆಳಕಿನ ವೇಗ ಅತ್ಯಂತ ಹೆಚ್ಚು ?

(A) *Q* (B) *P*

(C) *S* (D) *R*

ಉತ್ತರ: (C) *S*

Observe the following table :

Material medium	*Refractive index*
P	1.52
Q	1.44
R	2.42
S	1.33

In which material medium the speed of light is very high ?

(A) *Q* (B) *P*

(C) *S* (D) *R*

Ans. : (C) *S*

53. ನ್ಯೂಕ್ಲೀಯಾರ್ ವಿದ್ಯುತ್ ಕ್ರಿಯಾಕಾರಿಯಲ್ಲಿ ಶಕ್ತಿಯ ಮೂಲ

(A) ನ್ಯೂಕ್ಲೀಯ ವಿದಳನ ಕ್ರಿಯೆ

(B) ನಿಯಂತ್ರಿತ ಸರಪಣಿ ನ್ಯೂಕ್ಲೀಯ ವಿದಳನ ಕ್ರಿಯೆ

(C) ಬಹಿರುಷ್ಣಕ ಕ್ರಿಯೆ

(D) ನ್ಯೂಕ್ಲೀಯ ಸಮ್ಮಿಲನ ಕ್ರಿಯೆ

ಉತ್ತರ: (B) ನಿಯಂತ್ರಿತ ಸರಪಳಿ ನ್ಯೂಕ್ಲಿಯ ವಿದಳನ ಕ್ರಿಯೆ

The source of energy in nuclear power reactor is

(A) nuclear fission reaction

(B) controlled nuclear fission chain reaction

(C) exothermic reaction

(D) nuclear fusion reaction

Ans. : (B) controlled nuclear fission chain reaction

54. ಈ ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಪೀನ ಮಸೂರದ ಒಂದು ಗುಣ, ಇದು

(A) ಬೆಳಕಿನ ಕಿರಣಗಳನ್ನು ವಿಕೇಂದ್ರೀಕರಿಸುತ್ತದೆ

(B) ಅಂಚುಗಳಲ್ಲಿ ದಪ್ಪನಾಗಿದ್ದು ಮಧ್ಯದಲ್ಲಿ ತೆಳುವಾಗಿರುತ್ತದೆ

(C) ಸತ್ಯ ಮತ್ತು ನೇರ ಪ್ರತಿಬಿಂಬವನ್ನು ಉಂಟುಮಾಡುತ್ತದೆ

(D) ಅಂಚುಗಳಲ್ಲಿ ತೆಳುವಾಗಿದ್ದು ಮಧ್ಯದಲ್ಲಿ ದಪ್ಪವಾಗಿರುತ್ತದೆ

ಉತ್ತರ: (D) ಅಂಚುಗಳಲ್ಲಿ ತೆಳುವಾಗಿದ್ದು ಮಧ್ಯದಲ್ಲಿ ದಪ್ಪವಾಗಿರುತ್ತದೆ

One property of a convex lens among the following is that, it

(A) diverges the light rays

(B) is thicker at the edges and thinner at the middle

(C) forms real and erect image

(D) is thinner at the edges and thicker at the middle

Ans. : (D) is thinner at the edges and thicker at the middle

55. ಆಮ್ಲ ಮತ್ತು ಪ್ರತ್ಯಾಮ್ಲಗಳೆರಡರ ಜೊತೆಗೆ ವರ್ತಿಸಿದಾಗ ಲವಣ ಮತ್ತು ನೀರನ್ನು ಉತ್ಪತ್ತಿ ಮಾಡುವ ಸಂಯುಕ್ತ

(A) ಅಲ್ಯುಮಿನಿಯಂ ಆಕ್ಸೈಡ್ (B) ತಾಮ್ರದ ಆಕ್ಸೈಡ್

(C) ಕಬ್ಬಿಣದ ಆಕ್ಸೈಡ್ (D) ಸೋಡಿಯಂ ಆಕ್ಸೈಡ್

ಉತ್ತರ: (A) ಅಲ್ಯುಮಿನಿಯಂ ಆಕ್ಸೈಡ್

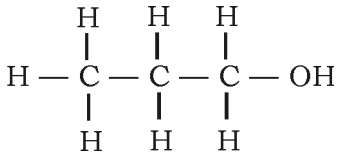
A compound that reacts with both acids as well as bases to produce salts and water is

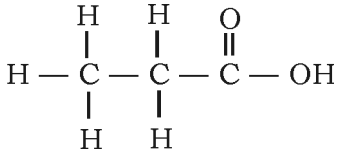
(A) aluminium oxide (B) copper oxide

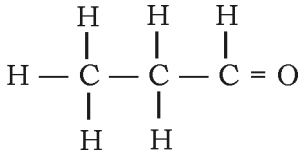
(C) iron oxide (D) sodium oxide

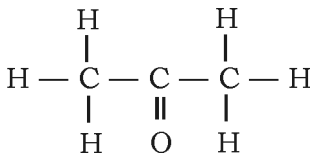
Ans. : (A) aluminium oxide

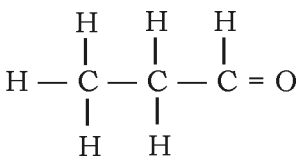
56. ಪ್ರೊಪೇನ್ಯಾಲ್‌ನ ರಚನಾಸೂತ್ರ

(A)


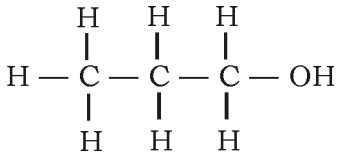
(B)


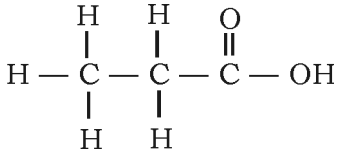
(C)


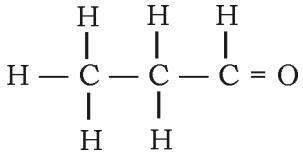
(D)


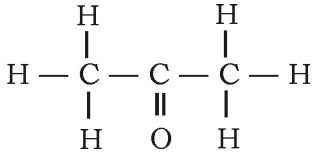
ಉತ್ತರ: (C)


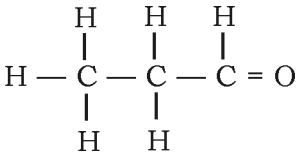
The structural formula of propanal is

(A) 

(B) 

(C) 

(D) 

Ans. : (C) 

57. ''ಧಾತುಗಳ ಗುಣಗಳು ಅವುಗಳ ಪರಮಾಣು ಸಂಖ್ಯೆಯ ಆವರ್ತನೀಯ ಪುನರಾವರ್ತನೆಗಳು.'' ಈ ನಿಯಮವನ್ನು ಪ್ರತಿಪಾದಿಸಿದವರು

(A) ನ್ಯೂಲ್ಯಾಂಡ್ಸ್ (B) ಮೆಂಡಲೀವ್

(C) ಡೋಬರೈನರ್ (D) ಹೆನ್ರಿ ಮೋಸ್ಲೆ

ಉತ್ತರ: (D) ಹೆನ್ರಿ ಮೋಸ್ಲೆ

"Properties of elements are a periodic function of their atomic number." This law was proposed by

(A) Newlands (B) Mendeleev

(C) Dobereiner (D) Henry Moseley

Ans. : (D) Henry Moseley

58. ಈ ಕೆಳಗಿನ ರಾಸಾಯನಿಕ ಕ್ರಿಯೆಗಳನ್ನು ಗಮನಿಸಿ :

$Fe + CuSO_4 \rightarrow FeSO_4 + Cu$

$Zn + FeSO_4 \rightarrow ZnSO_4 + Fe$

ಈ ಮೇಲಿನ ಕ್ರಿಯೆಗಳಲ್ಲಿರುವ ಲೋಹಗಳ ಕ್ರಿಯಾಶೀಲತೆಯ ಇಳಿಕೆಯ ಕ್ರಮ

(A) Zn > Fe > Cu (B) Fe > Cu > Zn

(C) Zn > Cu > Fe (D) Cu > Fe > Zn

ಉತ್ತರ: (A) Zn > Fe > Cu

Observe the following chemical reactions :

$Fe + CuSO_4 \rightarrow FeSO_4 + Cu$

$Zn + FeSO_4 \rightarrow ZnSO_4 + Fe$

The decreasing order of reactivity of the metals in the above reactions is

(A) Zn > Fe > Cu (B) Fe > Cu > Zn

(C) Zn > Cu > Fe (D) Cu > Fe > Zn

Ans. : (A) Zn > Fe > Cu

59. ಒಂದು ಧಾತುವಿನ ಪರಮಾಣು ಸಂಖ್ಯೆ 20 ಆಗಿದೆ. ಆಧುನಿಕ ಆವರ್ತಕ ಕೋಷ್ಟಕದಲ್ಲಿ ಅದರ ಆವರ್ತ ಸಂಖ್ಯೆ

(A) 2 (B) 8

(C) 4 (D) 3

ಉತ್ತರ: (C) 4

The atomic number of an element is 20. In the modern periodic table, this element belongs to the period

(A) 2 (B) 8

(C) 4 (D) 3

Ans. : (C) 4

60. ಒಂದು ಬೆಂಜೀನ್ ಅಣುವಿನ ರಚನೆಯಲ್ಲಿರುವ ಏಕಬಂಧಗಳು ಮತ್ತು ದ್ವಿಬಂಧಗಳ ಸಂಖ್ಯೆ ಕ್ರಮವಾಗಿ

(A) 3 ಮತ್ತು 9 (B) 9 ಮತ್ತು 3

(C) 6 ಮತ್ತು 6 (D) 7 ಮತ್ತು 5

ಉತ್ತರ: (B) 9 ಮತ್ತು 3

The number of single bonds and double bonds present in a structure of benzene molecule respectively

(A) 3 and 9 (B) 9 and 3

(C) 6 and 6 (D) 7 and 5

Ans. : (B) 9 and 3

61. ಸೋಡಿಯಂ ಕಾರ್ಬೊನೇಟ್ ಸಾರರಿಕ್ತ ಹೈಡ್ರೋಕ್ಲೋರಿಕ್ ಆಮ್ಲದೊಂದಿಗೆ ವರ್ತಿಸಿದಾಗ ಬಿಡುಗಡೆಯಾಗುವ ಅನಿಲ

(A) ಕಾರ್ಬನ್ ಡೈಆಕ್ಸೈಡ್ (B) ನೈಟ್ರೋಜನ್ ಡೈಆಕ್ಸೈಡ್

(C) ಹೈಡ್ರೋಜನ್ (D) ಕ್ಲೋರಿನ್

ಉತ್ತರ: (A) ಕಾರ್ಬನ್ ಡೈಆಕ್ಸೈಡ್

The gas liberated when sodium carbonate reacts with dilute hydrochloric acid is

(A) carbon dioxide (B) nitrogen dioxide

(C) hydrogen (D) chlorine

Ans. : (A) carbon dioxide

62. ಸಂಪೀಡಿತ ನೈಸರ್ಗಿಕ ಅನಿಲ (CNG) ದ ಪ್ರಧಾನ ಘಟಕ

(A) ಬ್ಯೂಟೇನ್ (B) ಈಥೇನ್

(C) ಮೀಥೇನ್ (D) ಪ್ರೋಪೇನ್

ಉತ್ತರ: (C) ಮೀಥೇನ್

The major component of compressed natural gas is

(A) butane (B) ethane

(C) methane (D) propane

Ans. : (C) methane

63. ನೀಲಿ ಲಿಟ್ಮಸ್ ಕಾಗದವನ್ನು ಕೆಂಪು ಬಣ್ಣಕ್ಕೆ ಬದಲಾಯಿಸುವ ವಸ್ತು

(A) ಸುಣ್ಣದ ತಿಳಿನೀರು (B) ಶುದ್ಧ ನೀರು

(C) ಸೋಡಿಯಂ ಹೈಡ್ರಾಕ್ಸೈಡ್ ದ್ರಾವಣ (D) ಜಠರ ರಸ

ಉತ್ತರ: (D) ಜಠರ ರಸ

The substance that converts blue litmus paper into red colour is

(A) lime water (B) pure water

(C) sodium hydroxide solution (D) gastric juice

Ans. : (D) gastric juice

64. ಲೋಹದ ಸಲ್ಫೈಡ್ ಅದುರುಗಳನ್ನು ಅವುಗಳ ಆಕ್ಸೈಡ್‌ಗಳನ್ನಾಗಿ ಪರಿವರ್ತಿಸಲು ಉಪಯೋಗಿಸುವ ಪ್ರಕ್ರಿಯೆ

(A) ಕಾಸುವಿಕೆ (B) ಹುರಿಯುವಿಕೆ

(C) ಅಪಕರ್ಷಣೆ (D) ವಿದ್ಯುದ್ವಿಭಜನೆ

ಉತ್ತರ: (B) ಹುರಿಯುವಿಕೆ

The process used to convert sulphide ores of metals into their oxides is

(A) calcination (B) roasting

(C) reduction (D) electrolysis

Ans. : (B) roasting

65. ಹೆಕ್ಸೀನ್ ಮತ್ತು ಸೈಕ್ಲೋಹೆಕ್ಸೇನ್‌ಗಳೆರಡರ ಸಾಮಾನ್ಯ ಅಣುಸೂತ್ರ

(A) C_6H_6 (B) C_6H_{14}

(C) C_6H_{12} (D) C_6H_{10}

ಉತ್ತರ: (C) C_6H_{12}

The common molecular formula of both hexene and cyclohexane is

(A) C_6H_6 (B) C_6H_{14}

(C) C_6H_{12} (D) C_6H_{10}

Ans. : (C) C_6H_{12}

66. ತುರಿಕೆ ಗಿಡದ ಎಲೆಗಳ ಚುಚ್ಚುವ ಕೂದಲಿನಲ್ಲಿರುವ ಆಮ್ಲ

(A) ಮೆಥೆನೋಯಿಕ್ ಆಮ್ಲ (B) ಆಕ್ಸಾಲಿಕ್ ಆಮ್ಲ

(C) ಸಿಟ್ರಿಕ್ ಆಮ್ಲ (D) ಲ್ಯಾಕ್ಟಿಕ್ ಆಮ್ಲ

ಉತ್ತರ: (A) ಮೆಥೆನೋಯಿಕ್ ಆಮ್ಲ

An acid present in the stinging hair of nettle plant leaves is

(A) methanoic acid (B) oxalic acid

(C) citric acid (D) lactic acid

Ans. : (A) methanoic acid

67. ಮಾನವನ ದೇಹದಲ್ಲಿ ಕಾರ್ಬೋಹೈಡ್ರೇಟ್, ಪ್ರೋಟೀನ್ ಮತ್ತು ಕೊಬ್ಬಿನ ಚಯಾಪಚಯ ಕ್ರಿಯೆಯನ್ನು ನಿಯಂತ್ರಿಸುವ ಹಾರ್ಮೋನ್

(A) ಟೆಸ್ಟೋಸ್ಟಿರಾನ್ (B) ಅಡ್ರಿನಲಿನ್

(C) ಇನ್ಸುಲಿನ್ (D) ಥೈರಾಕ್ಸಿನ್

ಉತ್ತರ: (D) ಥೈರಾಕ್ಸಿನ್

The hormone that regulates carbohydrate, protein and fat metabolism in the human body is

(A) Testosterone (B) Adrenaline

(C) Insulin (D) Thyroxin

Ans. : (D) Thyroxin

68. ಮೊಳೆಯುತ್ತಿರುವ ಬೀಜವಿರುವ ಕುಂಡವನ್ನು ಒಂದು ಕತ್ತಲೆ ಕೋಣೆಯಲ್ಲಿ ಇಡಲಾಗಿದೆ. ಉರಿಯುತ್ತಿರುವ ಮೇಣದ ಬತ್ತಿಯೊಂದನ್ನು ಅದರ ಸಮೀಪ ಕೆಲವು ದಿನಗಳವರೆಗೆ ಇರಿಸಲಾಗುತ್ತದೆ. ಮೊಳಕೆಯ ಮೇಲ್ಭಾಗವು ಉರಿಯುತ್ತಿರುವ ಮೇಣದ ಬತ್ತಿಯ ಬೆಳಕಿನ ಕಡೆಗೆ ಬಾಗುತ್ತದೆ. ಇದು

(A) ರಾಸಾಯನಿಕಾನುವರ್ತನೆ (B) ದ್ಯುತಿ ಅನುವರ್ತನೆ

(C) ಗುರುತ್ವಾನುವರ್ತನೆ (D) ಜಲಾನುವರ್ತನೆ

ಉತ್ತರ: (B) ದ್ಯುತಿ ಅನುವರ್ತನೆ

A pot that has growing seedling is kept in a dark room. A burning candle is placed near it for a few days. The top part of the seedling bends towards the light of burning candle. This is

(A) Chemotropism (B) Phototropism

(C) Geotropism (D) Hydrotropism

Ans. : (B) Phototropism

69. ಜೈವಿಕ ವಿಘಟನಾ ವಸ್ತುಗಳಿಗೆ ಸಂಬಂಧಿಸಿದಂತೆ ಇವುಗಳಲ್ಲಿ ಸರಿಯಾದ ಹೇಳಿಕೆ. ಈ ವಸ್ತುಗಳು

(A) ಪರಿಸರದಲ್ಲಿ ಸಹಜವಾಗಿ ಮರುಚಕ್ರೀಕರಣಗೊಳ್ಳುತ್ತವೆ

(B) ಪರಿಸರ ವ್ಯವಸ್ಥೆಯಲ್ಲಿ ಅನೇಕ ಜೀವಿಗಳಿಗೆ ಹಾನಿಯನ್ನು ಉಂಟುಮಾಡುತ್ತವೆ

(C) ವಿವಿಧ ಪೋಷಣಾ ಸ್ತರಗಳಲ್ಲಿ ಹಾನಿಕಾರಕ ರಾಸಾಯನಿಕಗಳ ಸಾಂದ್ರತೆಯನ್ನು ಹೆಚ್ಚಿಸುತ್ತವೆ

(D) ಪರಿಸರದಲ್ಲಿ ದೀರ್ಘಕಾಲ ಜಡವಾಗಿ ಉಳಿದುಬಿಡುತ್ತವೆ

ಉತ್ತರ: (A) ಪರಿಸರದಲ್ಲಿ ಸಹಜವಾಗಿ ಮರುಚಕ್ರೀಕರಣಗೊಳ್ಳುತ್ತವೆ

The correct statement with respect to biodegradable substances among the following. These substances

(A) undergo recycling naturally in the environment

(B) harm various organisms in the ecosystem

(C) increase the density of harmful chemicals in different tropic levels

(D) remain inert in the environment for a long time

Ans. : (A) undergo recycling naturally in the environment

70. ಹೂವಿನ ಲೈಂಗಿಕ ಸಂತಾನೋತ್ಪತ್ತಿ ಕ್ರಿಯೆಯಲ್ಲಿ ಕಂಡುಬರುವ ಸರಿಯಾದ ಹಂತಗಳು

(A) ಪರಾಗಸ್ಪರ್ಶ, ನಿಶೇಚನ, ಬೀಜ, ಭ್ರೂಣ

(B) ಬೀಜ, ಭ್ರೂಣ, ನಿಶೇಚನ, ಪರಾಗಸ್ಪರ್ಶ

(C) ಭ್ರೂಣ, ಬೀಜ, ಪರಾಗಸ್ಪರ್ಶ, ನಿಶೇಚನ

(D) ಪರಾಗಸ್ಪರ್ಶ, ನಿಶೇಚನ, ಭ್ರೂಣ, ಬೀಜ

ಉತ್ತರ: (D) ಪರಾಗಸ್ಪರ್ಶ, ನಿಶೇಚನ, ಭ್ರೂಣ, ಬೀಜ

The correct sequence found in the process of sexual reproduction in a flower is

(A) pollination, fertilization, seed, embryo

(B) seed, embryo, fertilization, pollination

(C) embryo, seed, pollination, fertilization

(D) pollination, fertilization, embryo, seed

Ans. : (D) pollination, fertilization, embryo, seed

71. ದೀಪಗಳು ಮತ್ತು ಫ್ಯಾನ್‌ಗಳ ಅನಾವಶ್ಯಕ ಕೆಲಸವನ್ನು ನಿಲ್ಲಿಸುವ ಮೂಲಕ ನೀವು ವಿದ್ಯುತ್‌ಅನ್ನು ಉಳಿಸುವುದು ಇದಕ್ಕೆ ಉದಾಹರಣೆಯಾಗಿದೆ

(A) ನಿರಾಕರಣೆ (B) ಮಿತಬಳಕೆ

(C) ಮರುಬಳಕೆ (D) ಮರು ಉದ್ದೇಶ

ಉತ್ತರ: (B) ಮಿತಬಳಕೆ

Saving electricity by switching off unnecessary work of lights and fans is an example of

(A) refuse (B) reduce

(C) reuse (D) repurpose

Ans. : (B) reduce

72. ದುಂಡಾದ ಹಸಿರು ಬಟಾಣಿ ಬೀಜದ ಸಸ್ಯವನ್ನು (*RRyy*) ಸುಕ್ಕಾದ ಹಳದಿ ಬಟಾಣಿ ಬೀಜದ ಸಸ್ಯದ (*rrYY*) ಜೊತೆ ಸಂಕರಣಗೊಳಿಸಿದಾಗ F_1 ಪೀಳಿಗೆಯಲ್ಲಿ ಉತ್ಪತ್ತಿಯಾಗುವ ಬೀಜಗಳು

(A) ದುಂಡಾದ ಮತ್ತು ಹಸಿರು ಬೀಜಗಳು (B) ಸುಕ್ಕಾದ ಮತ್ತು ಹಳದಿ ಬೀಜಗಳು

(C) ದುಂಡಾದ ಮತ್ತು ಹಳದಿ ಬೀಜಗಳು (D) ಸುಕ್ಕಾದ ಮತ್ತು ಹಸಿರು ಬೀಜಗಳು

ಉತ್ತರ: (C) ದುಂಡಾದ ಮತ್ತು ಹಳದಿ ಬೀಜಗಳು

If a round green seeded pea plant [*RRyy*] is crossed with wrinkled yellow seeded pea plant [*rrYY*], the seeds produced in F_1 generation are

(A) round and green seeds (B) wrinkled and yellow seeds

(C) round and yellow seeds (D) wrinkled and green seeds

Ans. : (C) round and yellow

73. ರಚನಾನುರೂಪಿ ಅಂಗಗಳು

(A) ಒಂದೇ ರೀತಿಯ ರಚನೆ ಹೊಂದಿದ್ದು, ಒಂದೇ ರೀತಿಯ ಕಾರ್ಯವನ್ನು ನಿರ್ವಹಿಸುತ್ತವೆ

(B) ಒಂದೇ ರೀತಿಯ ರಚನೆ ಹೊಂದಿದ್ದು, ವಿಭಿನ್ನ ರೀತಿಯ ಕಾರ್ಯಗಳನ್ನು ನಿರ್ವಹಿಸುತ್ತವೆ

(C) ವಿಭಿನ್ನ ರೀತಿಯ ರಚನೆ ಹೊಂದಿದ್ದು, ಒಂದೇ ರೀತಿಯ ಕಾರ್ಯವನ್ನು ನಿರ್ವಹಿಸುತ್ತವೆ

(D) ವಿಭಿನ್ನ ರೀತಿಯ ರಚನೆ ಹೊಂದಿದ್ದು, ವಿಭಿನ್ನ ರೀತಿಯ ಕಾರ್ಯಗಳನ್ನು ನಿರ್ವಹಿಸುತ್ತವೆ

ಉತ್ತರ: (B) ಒಂದೇ ರೀತಿಯ ರಚನೆ ಹೊಂದಿದ್ದು, ವಿಭಿನ್ನ ರೀತಿಯ ಕಾರ್ಯವನ್ನು ನಿರ್ವಹಿಸುತ್ತವೆ

Homologous organs

(A) have same structure and perform same function

(B) have same structure and perform different functions

(C) have different structures and perform same function

(D) have different structures and perform different functions

Ans. : (B) have same structure and perform different functions

74. ಮಾನವನ ದೇಹದ ಎಲ್ಲಾ ಭಾಗಗಳಿಂದ ರಕ್ತವನ್ನು ಹೃದಯಕ್ಕೆ ಸಾಗಿಸುವ ರಕ್ತನಾಳಗಳು

(A) ಅಪಧಮನಿಗಳು (B) ಲೋಮನಾಳಗಳು

(C) ಪುಪ್ಪುಸಕ ಅಪಧಮನಿಗಳು (D) ಅಭಿಧಮನಿಗಳು

ಉತ್ತರ: (D) ಅಭಿಧಮನಿಗಳು

The blood vessels that carry blood from all parts of the human body to the heart are

(A) arteries (B) capillaries

(C) pulmonary arteries (D) veins

Ans. : (D) veins

75. ಈ ಕ್ರಿಯೆಯ ಮೂಲಕ ಸಸ್ಯಗಳು ಹೆಚ್ಚಾದ ನೀರನ್ನು ಹೊರಹಾಕುತ್ತವೆ

(A) ಬಾಷ್ಪವಿಸರ್ಜನೆ (B) ದ್ಯುತಿಸಂಶ್ಲೇಷಣೆ

(C) ಉಸಿರಾಟ (D) ವಸ್ತುಸ್ಥಾನಾಂತರಣ

ಉತ್ತರ: (A) ಬಾಷ್ಪವಿಸರ್ಜನೆ

Plants can get rid of excess of water by this process

(A) Transpiration (B) Photosynthesis

(C) Respiration (D) Translocation

Ans. : (A) Transpiration

76. ಎರಡು ನರಕೋಶಗಳ ಮಧ್ಯೆ ಇರುವ ಸ್ಥಳಾವಕಾಶ

(A) ಡೆಂಡ್ರೈಟ್ (B) ಆಕ್ಸಾನ್

(C) ಸಂಸರ್ಗ (D) ಕೋಶಕಾಯ

ಉತ್ತರ: (C) ಸಂಸರ್ಗ

The gap between two neurons is

(A) dendrite (B) axon

(C) synapse (D) cell body

Ans. : (C) synapse

77. ಭ್ರೂಣವು ತಾಯಿಯ ರಕ್ತದಿಂದ ಪೋಷಣೆಯನ್ನು ಈ ವಿಶೇಷ ಭಾಗದ ಸಹಾಯದಿಂದ ಪಡೆಯುತ್ತದೆ

(A) ಅಂಡನಾಳ (B) ಅಂಡಾಶಯ

(C) ಗರ್ಭಕೋಶ (D) ಜರಾಯು

ಉತ್ತರ: (D) ಜರಾಯು

The embryo gets nutrition from the mother's blood with the help of a special part called

(A) Fallopian tube (B) Ovary

(C) Uterus (D) Placenta

Ans. : (D) Placenta

78. ಮಾನವನ ಗಂಡು ಸಂತಾನೋತ್ಪತ್ತಿ ವ್ಯೂಹದಲ್ಲಿ ವೀರ್ಯಾಣು ಮತ್ತು ಮೂತ್ರಗಳೆರಡಕ್ಕೂ ಇದು ಸಾಮಾನ್ಯ ಮಾರ್ಗವಾಗಿದೆ

(A) ಮೂತ್ರವಿಸರ್ಜನಾ ನಾಳ (B) ಮೂತ್ರನಾಳ

(C) ವೀರ್ಯನಾಳ (D) ಮೂತ್ರಕೋಶ

ಉತ್ತರ: (A) ಮೂತ್ರವಿಸರ್ಜನಾ ನಾಳ

The common passage for both sperms and urine in human male reproductive system is

(A) Urethra (B) Ureter

(C) Vas deferens (D) Urinary bladder

Ans. : (A) Urethra

79. ಈ ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಯಾವುದು ಜಲಕೊಯ್ಲು ರಚನೆಗಳ ಉಪಯೋಗವಲ್ಲ ?

(A) ಅಂತರ್ಜಲವನ್ನು ಮರುಭರ್ತಿ ಮಾಡುತ್ತವೆ

(B) ನೀರು ಆವಿಯಾಗುವುದಿಲ್ಲ

(C) ಸೊಳ್ಳೆಗಳಿಗೆ ಬ್ರೀಡಿಂಗ್ ಪ್ರದೇಶವನ್ನು ಒದಗಿಸುತ್ತದೆ

(D) ಸಸ್ಯವರ್ಗಗಳಿಗೆ ತೇವಾಂಶವನ್ನು ಒದಗಿಸುತ್ತದೆ

ಉತ್ತರ: (C) ಸೊಳ್ಳೆಗಳಿಗೆ ಬ್ರೀಡಿಂಗ್ ಪ್ರದೇಶವನ್ನು ಒದಗಿಸುತ್ತದೆ

Which of the following is NOT the advantage of water harvesting structures ?

(A) Recharge the ground water

(B) Water does not evaporate

(C) Provide breeding grounds for mosquitoes

(D) Provide moisture for vegetation

Ans. : (C) Provide breeding grounds for mosquitoes

80. ಜೀವಿಯೊಂದು ತನ್ನ ಜೀವಿತ ಕಾಲದ ಅನುಭವಗಳನ್ನು ಮುಂದಿನ ಪೀಳಿಗೆಗೆ ವರ್ಗಾಯಿಸಲಾಗುವುದಿಲ್ಲ. ಏಕೆಂದರೆ, ಅವು

(A) ಆನುವಂಶೀಯ ಗುಣಗಳು (B) ಗಳಿಸಿದ ಗುಣಗಳು

(C) ಪ್ರಬಲ ಗುಣಗಳು (D) ದುರ್ಬಲ ಗುಣಗಳು

ಉತ್ತರ: (B) ಗಳಿಸಿದ ಗುಣಗಳು

The experiences of an individual during its lifetime cannot be passed on to its progeny because, they are

(A) inherited traits (B) acquired traits

(C) dominant traits (D) recessive traits

Ans. : (B) acquired traits

A

ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 16]

Total No. of Printed Pages : 16]

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 38]

Total No. of Questions : 38]

Karnataka SSLC Science Question Paper 2022

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತ ವಿಜ್ಞಾನ, ರಸಾಯನ ವಿಜ್ಞಾನ ಮತ್ತು ಜೀವ ವಿಜ್ಞಾನ / **Physics, Chemistry & Biology**)

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / **English Medium**)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ & ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / **Regular Fresh & Regular Repeater**)

ದಿನಾಂಕ : 11. 04. 2022] [Date : 11. 04. 2022

ಸಮಯ : ಬೆಳಗ್ಗೆ 10-30 ರಿಂದ ಮಧ್ಯಾಹ್ನ 1-45 ರವರೆಗೆ] [Time : 10-30 A.M. to 1-45 P.M.

ಗರಿಷ್ಠ ಅಂಕಗಳು : 80] [Max. Marks : 80

General Instructions to the Candidate :

1. There are *three* parts in the question paper :
   Part A : Physics, Part B : Chemistry, Part C : Biology.
2. This question paper consists of objective and subjective types of 38 questions.
3. This question paper has been sealed by reverse jacket. You have to cut on the right side to open the paper at the time of commencement of the examination. Check whether all the pages of the question paper are intact.
4. Follow the instructions given against both the objective and subjective types of questions.
5. Figures in the right hand margin indicate maximum marks for the questions.
6. The maximum time to answer the paper is given at the top of the question paper. It includes 15 minutes for reading the question paper.

PART - A

(PHYSICS)

I. *Four* alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. $4 \times 1 = 4$

1. The device used to produce electricity is

(A) Galvanometer

(B) Electric generator

(C) Ammeter

(D) Electric motor.

2. The correct formula that shows the relationship between potential difference, electric current and resistance in an electric circuit is

(A) $I = \frac{R}{V}$ (B) $I = VR$

(C) $V = \frac{I}{R}$ (D) $R = \frac{V}{I}$.

3. In Fleming's right hand rule, the middle finger indicates the direction of

(A) induced electric current

(B) magnetic field

(C) motion of the conductor

(D) mechanical force.

4. To get diminished and real image of an object from a convex lens, the object should be placed

(A) at principal focus F_1

(B) between principal focus F_1 and $2F_1$

(C) beyond $2F_1$

(D) between principal focus F_1 and optical centre O.

II. Answer the following questions : 2 × 1 = 2

5. Magnetic field lines do not intersect each other. Why ?

6. Mention the SI unit of power of lens.

III. Answer the following questions : 2 × 2 = 4

7. Draw the schematic diagram of an electric circuit comprising of electric cell, electric bulb, ammeter and plug key.

8. An object is placed at 25 cm in front of a concave mirror of focal length 15 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image ?

OR

A concave lens has focal length of 15 cm. At what distance should the object from the lens be placed so that it forms an image at 10 cm from the lens ?

IV. Answer the following questions : $3 \times 3 = 9$

9. Which is the major component of biogas ? Write four characteristics of a good source of energy.

OR

Which element is used in making solar cell ? Write any four advantages of solar cells.

10. Draw the ray diagram to show the image formation by a convex lens, when the object is kept at $2F_1$ of the lens. With the help of the ray diagram mention the position and nature of the image formed.

[F_1 : Principal focus of the lens]

11. What are the functions of an earth wire ? It is necessary to connect the electric appliances having metallic body to the earth wire in domestic electric circuit. Why ? Explain.

OR

Explain Faraday's experiment related to electromagnetic induction. Mention the difference between direct and alternate current.

Answer the following question : **1 × 4 = 4**

12. a) What are the advantages of connecting electrical devices in parallel in an electric circuit instead of connecting them in series ?

b) How are ammeter and voltmeter connected in an electric circuit ? What are their function ?

Answer the following question : **1 × 5 = 5**

13. a) What is refraction of light ? State two laws of refraction of light.

b) What is refractive index of light ? "The refractive index of diamond is 2·42." What is the meaning of this statement ?

PART - B

(CHEMISTRY)

VII. *Four* alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. $2 \times 1 = 2$

14. The gas liberated at the cathode in the electrolysis of water is

(A) Oxygen

(B) Hydrogen

(C) Chlorine

(D) Nitrogen.

15. Atomic number of chlorine is 17. The period number of this element in modern periodic table is

(A) 2

(B) 7

(C) 4

(D) 3.

VIII. Answer the following questions : 4 × 1 = 4

16. State modern periodic law.

17. Write any two uses of Plaster of Paris.

18. Write the structural formula of ethene molecule.

19. $ZnO + C \rightarrow Zn + CO$

In this reaction name the reactant

i) that is oxidised and C

ii) that is reduced. ZnO

IX. Answer the following questions : 3 × 2 = 6

20. The pH values of *A*, *B* and *C* solutions are 5, 6 and 7 respectively. Which of these solutions is more acidic in nature ? Why ?

21. Draw the diagram to show the arrangement of the apparatus used for testing the conductivity of salt solution and label 'graphite rod'.

22. Give reason :

a) Metals are used in making cooking vessels.

b) Sodium metal is stored in kerosene.

OR

Give reason :

a) When a calcium metal reacts with water, the liberated hydrogen gas does not catch fire.

b) Ionic compounds have high melting and boiling points.

Answer the following questions : $3 \times 3 = 9$

23. What is atomic size ? In the modern periodic table the atomic size decreases along a 'period' and increases down the 'group'. Why ? Explain.

24. Draw the diagram of arrangement of the apparatus to show the reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning. Label the following parts :

i) Zinc granules

ii) Delivery tube.

25. Write the balanced chemical equation for the following chemical reactions :

i) Calcium carbonate $\xrightarrow{\text{Heat}}$ Calcium oxide + Carbon dioxide

ii) Hydrogen + Chlorine $\longrightarrow$ Hydrogen chloride

iii) Magnesium + Hydrochloric acid $\longrightarrow$ Magnesium chloride + Hydrogen.

OR

Which type of chemical reaction takes place when an iron nail is dipped in copper sulphate solution ? Why ? Write a balanced chemical equation for this chemical reaction.

XI. **Answer the following question :** $1 \times 4 = 4$

26. a) What are structural isomers ? Write the molecular and structural formula of butane.

b) What is catenation ? Write general formula for alkenes.

PART - C

(BIOLOGY)

XII. ***Four*** **alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet.** $2 \times 1 = 2$

27. Atmospheric layer that absorbs ultraviolet radiations coming from the sunlight is made up of this molecule

(A) N_2 (B) H_2

(C) O_3 (D) O_2

28. In humans, sexually transmitted viral infection is

(A) AIDS

(B) Syphilis

(C) Tuberculosis

(D) Gonorrhoea.

XIII. Answer the following questions : 2 × 1 = 2

29. What is the role of decomposers in an ecosystem ?

30. In males, testes are located outside the abdominal cavity in scrotum. Why ?

XIV. Answer the following questions : 3 × 2 = 6

31. Mention the function of the following plant hormones :

i) Auxin

ii) Cytokinin.

32. Draw the diagram showing the longitudinal section of a flower and label 'ovary'.

33. Give reason :

a) 'Ventricles of the human heart have thick wall.'

b) 'It is necessary to separate oxygenated and deoxygenated blood in mammals and birds.'

XV. Answer the following questions : **3 × 3 = 9**

34. When a tall (*TT*) pea plant is crossed with a dwarf (*tt*) pea plant, represent the result obtained in F_2 generation of monohybrid cross with the help of checker board and mention the ratio of varieties of plants.

35. What is trophic level ? Flow of energy in an ecosystem is always unidirectional. Why ? Explain.

36. a) Mention any four main factors that lead to the rise of new species.

b) The experiences of an individual acquired during its lifetime cannot be passed on to its progeny. Give reason.

OR

What are fossils ? Mention the methods of estimation of dating fossils and explain briefly.

XVI. Answer the following questions : **2 × 4 = 8**

37. Which molecule is formed during the first step of cellular respiration by the breakdown of glucose molecule in cytoplasm ? Mention the types of respiration and write any two differences between them.

OR

Which are the factors essential for photosynthesis ? Mention the events that occur during this process and represent this process by balanced chemical equation.

38. Draw the diagram showing the structure of the human brain and label the following parts :

i) Cerebrum

ii) Cerebellum.

5 ● RF(A)/100/3330

A

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Total No. of Printed Pages : 16]

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 38]

Total No. of Questions : 38]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E**

Code No. : 83-E

CCE RF
UNREVISED
FULL SYLLABUS

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತ ವಿಜ್ಞಾನ, ರಸಾಯನ ವಿಜ್ಞಾನ ಮತ್ತು ಜೀವ ವಿಜ್ಞಾನ / **Physics, Chemistry & Biology**)

(ಇಂಗ್ಲಿಷ್ ಮಾಧ್ಯಮ / **English Medium**)

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / **Regular Fresh**)

ದಿನಾಂಕ : 10. 04. 2023] [Date : 10. 04. 2023

ಸಮಯ : ಬೆಳಗ್ಗೆ 10-30 ರಿಂದ ಮಧ್ಯಾಹ್ನ 1-45 ರವರೆಗೆ]

[Time : 10-30 A.M. to 1-45 P.M.

ಗರಿಷ್ಠ ಅಂಕಗಳು : 80] [Max. Marks : 80

General Instructions to the Candidate :

1. There are *three* parts in the question paper :
   Part A : Physics, Part B : Chemistry, Part C : Biology.
2. This question paper consists of objective and subjective types of 38 questions.
3. This question paper has been sealed by reverse jacket. You have to cut on the right side to open the paper at the time of commencement of the examination. Check whether all the pages of the question paper are intact.
4. Follow the instructions given against both the objective and subjective types of questions.
5. Figures in the right hand margin indicate maximum marks for the questions.
6. The maximum time to answer the paper is given at the top of the question paper. It includes 15 minutes for reading the question paper.

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TEAR HERE TO OPEN THE QUESTION PAPER
ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಇಲ್ಲಿ ಕತ್ತರಿಸಿ

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PART – A

(PHYSICS)

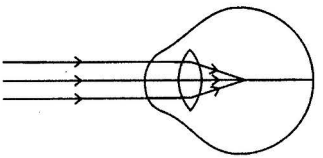
I. *Four* alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. **4 × 1 = 4**

1. The device used to measure the rate of current in a circuit is

   (A) Ammeter (B) Voltmeter

   (C) Galvanometer (D) Battery

2. Observe the given figure. Identify the eye defect indicated in this figure.



   (A) Presbyopia (B) Hypermetropia

   (C) Myopia (D) Cataract

3. A light ray enters to rarer medium from a denser medium. Then the speed of that light ray

   (A) decreases and bends towards the normal

   (B) increases and bends away from the normal

   (C) decreases and bends away from the normal

   (D) increases and bends towards the normal

4. The inner wall of the solar cooker is painted black. Because black colour

(A) reflects light

(B) converges solar rays

(C) prevents from rusting

(D) absorbs more heat

II. Answer the following questions : **2 × 1 = 2**

5. Write the symbols of the following components used in an electric circuit.

i) Rheostat

ii) Wires crossing without joining

6. What does the thumb indicate in the right hand thumb rule ?

III. Answer the following questions : **2 × 2 = 4**

7. Light enters from air to benzene having refractive index 1·50. Calculate the speed of light in benzene.

(Speed of light in air : 3×10^8 ms^{-1})

OR

A concave lens has focal length of 12 cm. At what distance should the object from the lens be placed so that it forms an image at 9 cm from the lens ?

8. Name the major constituent of biogas and write the properties of biogas.

OR

List the hazards of nuclear power generation.

IV. Answer the following questions : **3 × 3 = 9**

9. State Ohm's law. On which factors does the resistance of a conductor depend ? Mention the SI unit of electric power.

OR

State Joule's law of heating. How is fuse connected in the circuits ? Name the metal used in the filament and the gas filled in electric bulb.

10. The resistors R_1, R_2 and R_3 have the values 10 Ω, 20 Ω and 60 Ω respectively, which have been parallelly connected to a battery of 24 V in an electric circuit. Then calculate the following :

i) The current flowing through each resistor

ii) The total current in the circuit

iii) The total resistance of the circuit.

11. Draw the ray diagram for the image formation in a convex lens when the object is placed beyond $2F_1$. Mention the position and nature of the image formed.

[F_1 : Principal focus of the lens]

V. Answer the following question : **1 × 4 = 4**

12. a) What is solenoid ? Write the properties of the magnetic field lines formed around a current carrying solenoid.

b) What is alternating current ? Electric appliances having metallic body are connected to earth wire, why ?

VI. Answer the following question : **1 × 5 = 5**

13. a) How does rainbow form in the nature ? Explain. Mention the colour of the light that bends the most and that bends the least.

b) How does the eye lens accommodate to see the distant objects and nearby objects ? Explain.

PART – B

(CHEMISTRY)

VII. *Four* alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet. 2 × 1 = 2

14. The reactants that exchange ions by reacting with each other and form a precipitate among the following are

(A) $BaCl_2$ and Na_2SO_4

(B) Al_2O_3 and HCl

(C) NaOH and H_2SO_4

(D) Na_2O and CO_2

15. Among ${}_2X^4$, ${}_8Y^{16}$, ${}_{10}Z^{20}$ the elements having zero valency are

[2, 8, 10 are atomic numbers of elements]

(A) ${}_2X^4$ and ${}_8Y^{16}$

(B) ${}_8Y^{16}$ and ${}_{10}Z^{20}$

(C) ${}_2X^4$ and ${}_{10}Z^{20}$

(D) ${}_2X^4$, ${}_8Y^{16}$ and ${}_{10}Z^{20}$

VIII. Answer the following questions : **4 × 1 = 4**

16. The general formula of cycloalkanes is C_nH_{2n} and its first member is cyclopropane (C_3H_6). Write the molecular formula and structural arrangement of the fourth member of this homologous series.

17. Packets of chips are flushed with nitrogen gas. Why ?

18. An iron nail is dropped into a test tube having copper sulphate solution. The iron nail gradually turns to brownish colour. Why ?

19. What is hydrogenation ?

IX. Answer the following questions : **3 × 2 = 6**

20. Draw the diagram of arrangement of apparatus to show that acid solution in water conducts electricity and label dilute HCl solution.

21. "Calcium oxide and carbon dioxide are produced on heating calcium carbonate." Write the balanced chemical equation for this reaction. Mention the type of this chemical reaction.

22. Draw the diagram of arrangement of apparatus to show the action of steam on a metal.

X. Answer the following questions : **3 × 3 = 9**

23. a) Depict the formation of magnesium chloride with the help of electron dot structure.

b) Hydrogen gas is not liberated when a metal like zinc reacts with nitric acid. Why ?

OR

How are metals in the middle of the reactivity series extracted from their ores ? Explain.

24. a) Observe the given part of the modern periodic table and answer the following questions :

Groups → / Periods ↓	1	2	13	17
2	—	Be	—	—
3	Na	Mg	Al	Cl
4	—	Ca	—	—

i) Which element is more electropositive ? Why ?

ii) Atoms of which element have minimum atomic radius ? Why ?

b) Mention the period and group number of the element that has atomic number 19.

25. Name the salts used in the following situations and write their molecular formula :

a) To remove permanent hardness of water.

b) To make drinking water free from germs.

c) To support fractured bones in their right position.

OR

a) The pH values of four solutions are given in the below table. Classify these into acidic and basic solutions :

Solution	*pH Value*
e	5
f	13
g	9
h	2

b) Name the antacid used to neutralise excess of acid in the stomach.

XI. Answer the following question : **1 × 4 = 4**

26. a) How will ethanol be oxidised ?

b) Explain the cleaning action of soaps.

PART – C

(BIOLOGY)

XII. ***Four*** **alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet.** **2 × 1 = 2**

27. "A person immediately starts running soon after observing a snake." The correct transmission path of reflex impulse in this situation is

(A) Receptor → Sensory neuron → Brain → Relay neuron → Motor neuron → Effector

(B) Receptor → Sensory neuron → Spinal cord → Relay neuron → Motor neuron → Effector

(C) Effector → Spinal cord → Sensory neuron → Relay neuron → Motor neuron → Receptor

(D) Effector → Motor neuron → Relay neuron → Brain → Sensory neuron → Receptor

28. In humans, the testes are located outside the lower abdomen in the scrotum because

(A) to protect testes from mechanical shocks

(B) to increase the production of sperms

(C) to maintain the secretion of testosterone hormone

(D) to maintain the temperature required for sperm production.

XIII. Answer the following questions : **2 × 1 = 2**

29. What is the role of abscisic acid in plants ?

30. Write two examples for the organisms that reproduce by binary fission.

XIV. Answer the following questions : **3 × 2 = 6**

31. Mention the tools used for tracing the evolutionary relationships between the organisms.

32. Observe the given below figures :

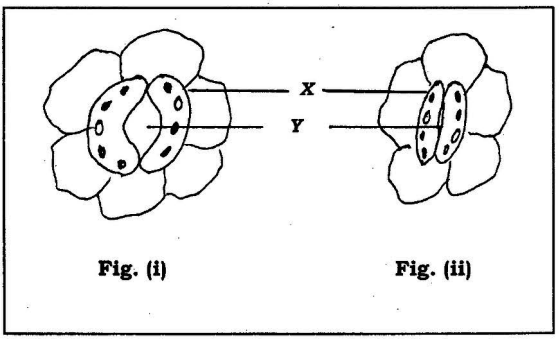


Fig. (i) **Fig. (ii)**

a) Which figure indicates the massive amount of exchange of gases ? Why ?

b) Name the parts *X* and *Y*. What is the function of the part *X* ?

33. Give an example for a food chain of grassland ecosystem. If there is an increase in the number of organisms in the second trophic level, how does this affect on that food chain ?

XV. Answer the following questions : **3 × 3 = 9**

34. What is pollination ? What are the changes that occur in the flower after pollination ?

35. Coal and petroleum products should be used judiciously. Why ?

36. Tall pea plant producing red flowers (*TT RR*) is crossed with short pea plant producing white flowers (*tt rr*).

i) Mention the type of plants produced from these plants in the F_1 generation.

ii) Write the ratio of plants obtained in the F_2 generation by crossing the plants of F_1 generation and name the varieties of plants obtained.

OR

Analyse the situations given below. Answer the questions given :

Situation 1 : The number of green grasshoppers in a green zone has been increasing from one generation to another generation.

Situation 2 : The number of brown grasshoppers in the same green zone has been reducing.

Here,

a) Where could genetic drift be happened more ? Why ?

b) How can natural selection be considered as an important factor in organic evolution ?

XVI. Answer the following questions : **2 × 4 = 8**

37. Draw the diagram showing the structure of human brain. Label the following parts :

i) Hypothalamus

ii) Pons.

38. Explain the digestion of food materials in stomach and small intestine.

OR

Explain the role of xylem and phloem tissues in the transportation of materials in plants.