ಮೇ/ಜೂನ್ 2024-2025 ರ ಪರೀಕ್ಷೆ-2

MAY/JUNE 2024-2025 EXAMINATION-2

[ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 16

[Total No. of Printed Pages : 16

[ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 38

[Total No. of Questions : 38

CCE RR/PR/PF

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

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

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

(ಆಂಗ್ಲ ಮಾಧ್ಯಮ / English Medium)

(ಶಾಲಾ ಪುನರಾವರ್ತಿತ ಅಭ್ಯರ್ಥಿ / ಖಾಸಗಿ ಪುನರಾವರ್ತಿತ ಅಭ್ಯರ್ಥಿ / ಖಾಸಗಿ ಅಭ್ಯರ್ಥಿ)

(Regular Repeater / Private Repeater / Private Fresh)

ದಿನಾಂಕ : 31. 05. 2025] [Date : 31. 05. 2025

ಸಮಯ : ಬೆಳಗ್ಗೆ 10-00 ರಿಂದ ಮಧ್ಯಾಹ್ನ 1-15 ರವರೆಗೆ] [Time : 10-00 A.M. to 1-15 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 38 questions in all.
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 ***(Follow the arrow mark)***. **Do not cut the left side to open the paper.** Check whether all the pages of the question paper are intact.
4. Follow the instructions given against the 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.
7. Ensure that the Version of the question paper distributed to you and the Version printed on your admission ticket is the same.

Cut here /ಇಲ್ಲಿ ಕತ್ತರಿಸಿ

Tear here/ಇಲ್ಲಿಂದ ಕತ್ತರಿಸಿ

TEAR HERE TO OPEN THE QUESTION PAPER WITH REVERSE JACKET
ಹಿಮ್ಮುಖ ಜಾಕೆಟ್ ಹೊಂದಿರುವ ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಇಲ್ಲಿ ಕತ್ತರಿಸಿ

SCIENCE

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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.** **3 × 1 = 3**

1. In Fleming's left hand rule middle finger indicates the direction of the

   (A) electric current

   (B) induced electric current

   (C) movement of the conductor

   (D) magnetic field

2. 0·75A current flows through an electric bulb when it is connected to a 220 V generator. Then the electric power of this bulb is

   (A) 125 W (B) 135 W

   (C) 165 W (D) 195 W

3. If the number of turns in a current carrying circular coil is increased by 10 times, then the producing magnetic field increases by

   (A) 100 times (B) 10 times

   (C) 20 times (D) 1000 times

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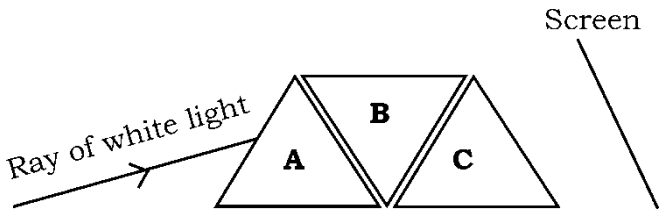
II. Answer the following questions : 2 × 1 = 2

4. Draw the symbols of the following components used in an electric circuit.

   i) Electric cell

   ii) Rheostat or variable resistance.

5. Glass prisms *A, B* and *C* are arranged as shown in the figure given below. When a ray of white light is passed through prism *A*, does the spectrum of light form on the screen ? Give reason.



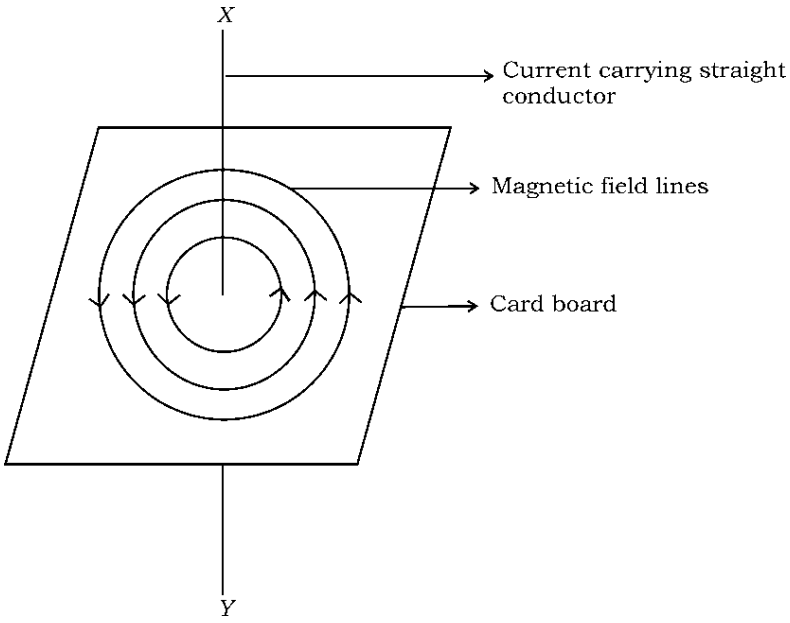
III. Answer the following questions : 2 × 2 = 4

6. State the laws of refraction of light.

7. What precautions should be taken to avoid the overloading in domestic electric circuits ? Electrical appliances having metallic body are to be earthed essentially. Why ?

OR

Observe the given diagram and answer the questions given below :



i) Mention the direction of electric current flowing in the conductor.

ii) State the law that helped to determine the direction of current.

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

8. An object 5 cm in size is placed at 30 cm in front of a concave mirror of focal length 20 cm. At what distance from the mirror should a screen be placed in order to get a sharp image ? Find the nature and size of the image formed.

9. Draw the ray diagram of the image formed when an object is kept between F_1 and $2F_1$ of a convex lens. Mention the nature and position of the image formed.

(F_1 : Principal focus of the lens)

10. How do you trace the magnetic field lines formed around a bar magnet using compass needle ? Two magnetic field lines do not intersect each other. Why ?

V. <u>Answer the following question</u> : **1 × 4 = 4**

11. a) Explain the phenomenon of formation of the rainbow in the atmosphere.

b) Why do stars twinkle ?

OR

a) What is near-sightedness (myopia) ? Mention the causes for this defect.

b) What is power of accommodation of the eye ? What are the changes that occur in the eye while seeing the distant objects ?

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

12. a) i) What is 'Potential difference' ?

ii) What are the advantages of connecting the electrical appliances in parallel in domestic electric circuits ?

b) i) State Ohm's law.

ii) What is 'electrical resistance' of a conductor ? On what factors does it depend ?

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. 3 × 1 = 3

13. The gas flushed to the bags containing chips is

(A) Hydrogen (B) Oxygen

(C) Chlorine (D) Nitrogen

14. The pH value of a solution that turns blue litmus paper into red colour is

(A) 5 (B) 7

(C) 9 (D) 14

15. The electronic configuration of the three elements *P*, *Q* and *R* respectively are 2, 8, 2 ; 2, 8 and 2, 8, 7. Among these, the elements that can react with each other to produce an ionic compound are

(A) *P* and *Q* (B) *P* and *R*

(C) *Q* and *R* (D) *P, Q* and *R*

VIII. <u>Answer the following questions</u> : **3 × 1 = 3**

16. $CuO + H_2 \rightarrow Cu + H_2O$; Mention the oxidised and reduced reactants in this reaction.

17. Aqueous solution of nitric acid (HNO_3) shows acidic nature but the solution of alcohol does not show this nature. Why ?

18. The solution of baking soda is applied on the part of the skin stung by the stinging hairs of the leaves of the nettle plant. Give reason.

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

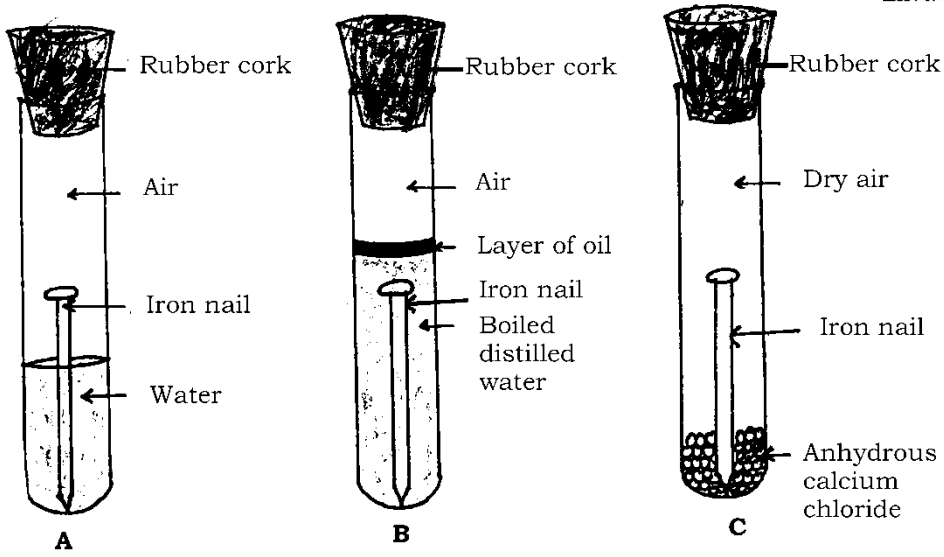
19. a) Write the electron dot structure of hydrogen molecule.

b) Write the structure of benzene molecule.

OR

How do soaps and detergents react with hard water ? Explain.

20. Observe the test tubes *A, B* and *C* given in the following figures.



i) In which test tube the iron nail undergoes rust ? Why ?

ii) Iron nails present in other two test tubes do not rust. Why ?

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21. What is brine solution ? What products will obtain when this solution is subjected to electrolysis ?

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

22. Complete the following chemical equations :

i) $NaCl + AgNO_3 \rightarrow \square + \square$

ii) $CaCO_3 \xrightarrow{\text{Heating}} \square + \square$

iii) $Pb + CuCl_2 \rightarrow \square + \square$

OR

a) Mention any two factors that help to determine that a change is a chemical reaction.

b) Mention the type of chemical reaction that takes place when sodium sulphate solution is added to barium chloride solution. Write the balanced chemical equation for this reaction.

23. Write the diagram to show the reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning. Label the following :

i) Zinc granules

ii) Hydrogen gas.

24. How do calcium and sodium metals react with cold water ? Explain. Which of these metals is more reactive ?

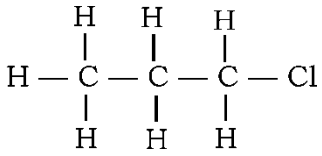
OR

Write the steps involved in the extraction of zinc from zinc carbonate. Highly reactive metal oxides cannot be reduced by using carbon. Why ?

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

25. a) How does the addition reaction of carbon compounds is different from substitution reaction ? Give an example for each.

b) Name the carbon compounds having the following structural formula :

i)


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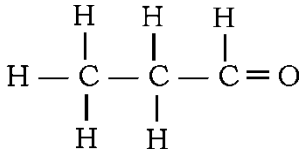

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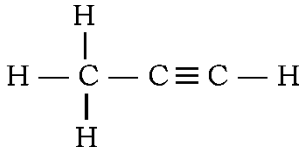

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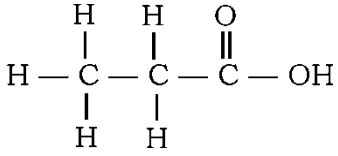


SCIENCE

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**

26. The upward growth of the shoot in plants is

(A) negative geotropism and positive hydrotropism

(B) positive geotropism and negative hydrotropism

(C) negative phototropism and positive geotropism

(D) negative geotropism and positive phototropism

27. Grass → Grasshopper → Frog → Snake → Eagle ;

The secondary consumer in this food chain is

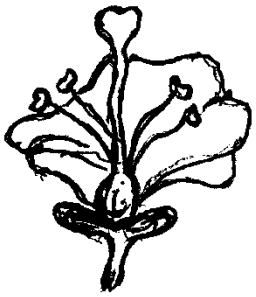
(A) Grasshopper (B) Snake

(C) Frog (D) Eagle

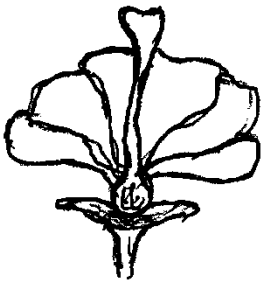
XIII. Answer the following questions : **3 × 1 = 3**

28. Draw the diagram to show the structure of open stomata.

29. Observe the figures of flowers given below :



Flower-A



Flower-B

Name the types of pollination that can occur in these two flowers.

30. What is Heredity ?

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

31. What is the function of the following hormones ?

    i) Abscisic acid

    ii) Thyroxine.

32. "Vegetative propagation is highly advantageous to the field of agriculture." Justify this statement.

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33. Write any two differences between biodegradable and non-biodegradable substances with an example for each.

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

34. a) Mention any two methods used by plants to get rid of excretory products.

b) How is urine produced in human body ? Explain.

OR

a) Which process helps to transport water to the higher parts of the plants ?

b) Mention the function of the following digestive juices in the human alimentary canal.

i) Gastric juice

ii) Intestinal juice.

35. a) Red colour (*RR*) flower producing pea plant is crossed with white colour (*rr*) flower producing pea plant. Show the result of F_2 generation with the help of checker board.

b) How is the sex of male child be determined in humans ?

36. What is DNA replication ? How does re-establishment of chromosome number occur in sexual reproduction ?

OR

What is placenta ? What is its function ? In human body testes are located in scrotum outside the abdominal cavity. Why ?

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

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

i) Pons

ii) Cerebrum.

38. a) What is anaerobic respiration ? What products will be produced in this process ?

b) What is double circulation of blood ? How this type of blood circulation is advantageous to the birds and mammals ?

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