ಮಾರ್ಚ್/ಏಪ್ರಿಲ್ 2025 ರ ಪರೀಕ್ಷೆ-1
MARCH/APRIL 2025 EXAMINATION-1

A

CCE RF/RR/ PF/ PR

[ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 16

[Total No. of Printed Pages : 16

[ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 38

[Total No. of Questions : 38

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

(Regular Fresh / Regular Repeater / Private Fresh / Private Repeater)

ದಿನಾಂಕ : 02. 04. 2025] [Date : 02. 04. 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 :

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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.

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.** **3 × 1 = 3**

1. Convex mirrors are used in

   (A) torches

   (B) rear view mirrors of vehicles

   (C) search-lights

   (D) shaving mirrors

2. The sun is visible to us about two minutes before the actual sunrise and about two minutes even after the actual sunset because of atmospheric

   (A) refraction of light

   (B) reflection of light

   (C) scattering of light

   (D) dispersion of light

3. A current carrying rod is placed between the poles of a horse-shoe magnet. For the maximum displacement of the rod the angle between the direction of electric current and the direction of magnetic field must be

(A) 0° (B) 45°

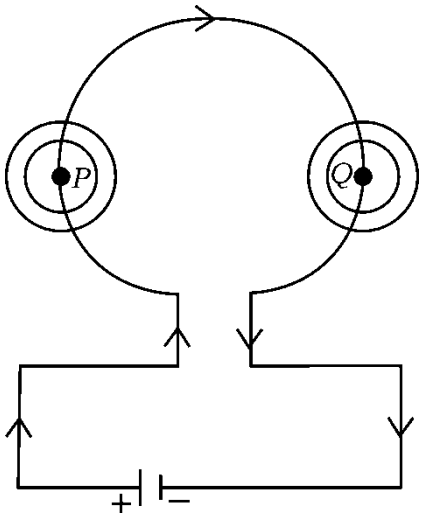
(C) 90° (D) 180°

II. Answer the following questions : 3 × 1 = 3

4. Draw a symbol diagram of a resistor used in an electric circuit.

5. "Two magnetic field lines do not intersect each other." Justify.

6. Observe the circuit diagram given below. Mention the direction of magnetic field that forms around the point *P* and around the point *Q*.



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

7. Explain Newton's experiment that shows the recombination of spectrum of white light.

8. Write any two differences between near-sighted (Myopic) and far-sighted (Hypermetropic) eyes.

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

9. Draw the ray diagram of image formed when an object is kept at $2F_1$ of the convex lens. With the help of the ray diagram write the position and nature of the image.

(F_1 : Principal focus of the lens)

10. a) State Ohm's law.

b) Write the factors on which the resistance of a conductor depends.

11. a) What factor helps for determining the relative strength of a magnetic field ?

b) What is solenoid ? How is an electromagnet prepared by using it ?

OR

In domestic electric circuits,

a) What is the function of earth wire ?

b) What precautions should be taken to avoid overloading ?

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

12. a) How is an ammeter and a voltmeter connected to an electric circuit ? Mention their function.

b) "In domestic electric circuit, the electrical appliances are generally connected in parallel." Give reasons.

13. The radius of curvature of a spherical mirror is 36 cm. Find its focal length. A candle of 5 cm length is placed at a distance of 27 cm in front of a convex mirror of the same focal length. Mention the position and nature of the image and also find the size of the image formed.

OR

The focal length of a spherical mirror is 10 cm. Find its radius of curvature. An object of 4 cm size is placed at 20 cm in front of a concave mirror of the same focal length. At what distance from the mirror should a screen be placed in order to obtain a sharp image of the object ? Mention the nature of the image formed and also find the size of the image.

PART – B

(CHEMISTRY)

VI. ***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. Correct statement related to the soaps among the following is, soaps

(A) easily give excess of foam in hard water

(B) form insoluble precipitate in hard water

(C) easily clean oils like dirt in hard water

(D) are sodium salts of sulphonic acid

15. $CuO + H_2 \xrightarrow{Heat} Cu + H_2O$

In this chemical reaction,

(A) hydrogen is reduced to form water

(B) exchange of ions took place between the reactants

(C) copper oxide is oxidised to form copper

(D) copper oxide is reduced to form copper

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

16. Mention any two measures for preventing corrosion of iron.

17. How is concentrated acid diluted ?

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

18. What is rancidity ? Mention any two methods of preventing rancidity.

19. Give reason :

a) Zinc oxide is called as an amphoteric oxide

b) Sodium metal is stored in kerosene.

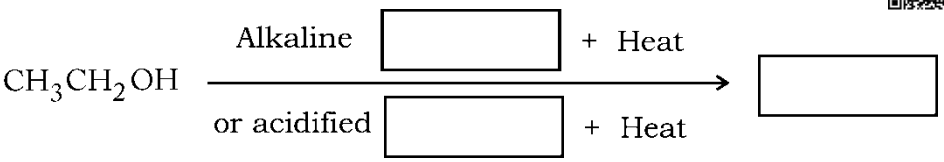
OR

Give reason :

a) Gold is used to make jewellery

b) Ionic compounds in the solid state do not conduct electricity.

20. Complete the following oxidation reaction and name the functional group that is found in the product :



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

21. Draw the diagram of the arrangement of apparatus used to show the electrolytic refining of copper. Label the following parts :

i) Cathode

ii) Impurities.

22. Write the chemical equations for the following reactions.

i) Quicklime is reacted with water

ii) Zinc pieces are added to copper sulphate solution

iii) Sodium chloride solution is added to silver nitrate solution.

OR

Balance the following chemical equations :

i) $H_2 + O_2 \longrightarrow H_2O$

ii) $Na_2CO_3 + HCl \longrightarrow NaCl + H_2O + CO_2$

iii) $N_2 + H_2 \longrightarrow NH_3$

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

23. a) NaOH, Ca $(OH)_2$, H_2 and Cl_2 materials are given to you. By using which of these materials, you can prepare bleaching powder ? Write the chemical name and one use of the bleaching powder.

b) i) How do you identify a solution as basic solution by using blue litmus paper ?

ii) Under what condition does a farmer treat the soil of his field with slaked lime ?

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

24. a) Write any two differences between saturated and unsaturated carbon compounds.

b) What are structural isomers ? Write the structural isomers of butane.

c) Write the electron dot structure of methane molecule.

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. **3 × 1 = 3**

25. The information source for making proteins in the cells is

(A) Gene (B) Chromosome

(C) DNA (D) Ribosome

26. Blood sugar level increases : Undersecretion of insulin hormone :: Swelling of the neck : ..... .

(A) Undersecretion of thyroxine hormone

(B) More secretion of insulin hormone

(C) More secretion of thyroxine hormone

(D) Excess intake of iodine.

27. Type of asexual reproduction that occurs in spirogyra is

(A) Budding

(B) Regeneration

(C) Binary fission

(D) Fragmentation

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

28. What is the function of ozone layer ?

29. What is neuron ?

30. The events that occur during photosynthesis are given below. Write these events in correct order.

i) Splitting of water molecules into hydrogen and oxygen

ii) Absorption of light energy by chlorophyll

iii) Conversion of carbon dioxide to carbohydrates

iv) Conversion of light energy to chemical energy.

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

31. How do auxins promote the growth of tendrils of climbing plants around a support ?

OR

How does our body respond when adrenaline is secreted into the blood ?

32. Construct a food chain using the organisms ; snake, frog, grass and grasshopper. Which organism has more accumulation of harmful chemicals in this food chain ?

33. Draw the diagram showing the germination of pollen on stigma and label 'ovary'.

XV. Answer the following questions : **4 × 3 = 12**

34. What is the role of the following enzymes in human alimentary canal ?

    i) Trypsin

    ii) Amylase

    iii) Lipase

35. Justify the following statements :

    a) Sexual type of reproduction leads to more variations.

    b) In woman's uterus the role of placenta is significant for the development of foetus.

OR

    a) How does menstruation occur in women ?

    b) In male reproductive system the testes are located outside the abdominal cavity in scrotum. Why ?

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

    i) Hypothalamus

    ii) Medulla

37. Round green colour (*RRyy*) seeds producing pea plant is crossed with wrinkled yellow colour seeds (*rrYY*) producing pea plant. Show the result of F_2 generation with the help of a checker board and write the ratio of varieties of plants.

OR

a) Explain the sex determination of a child in human beings.

b) How can the traits of organisms be decided as either dominant or recessive ?

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

38. a) Explain briefly the role of haemoglobin pigments present in our blood.

b) What are the different strategies of excretion found in plants ?