ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಲಿ

ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು – 560 003

KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD
Malleshwaram, Bengaluru - 560 003

2026–27ರ ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ – 3
S.S.L.C. MODEL QUESTION PAPER - 3: 2026-27

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject: SCIENCE

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

(ಆಂಗ್ಲ ಮಾಧ್ಯಮ / **English Medium**)

ವಿಷಯ ಸಂಕೇತ: **83-E**

ಸಮಯ : 3 ಗಂಟೆ 15 ನಿಮಿಷಗಳು]

ಗರಿಷ್ಠ ಅಂಕಗಳು : 80]

Subject Code : 83-E

[Time: 3 Hours 15 Minutes

[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.

3. Follow the instructions given against the 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.

[Turn over

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. **2 × 1 = 2**

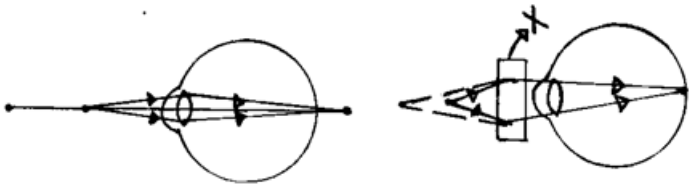
1. In order to obtain an image smaller than the object in a concave mirror, the object should be placed (F= principal focus, C= center of curvature, P=pole)
   (A) Between C and F (B) Far from C
   (C) Between P and F (D) At F
2. The work done in bringing a unit charge from one point to another through a conductor is called
   (A) Electric current (B) Electric potential difference
   (C) Electric resistance (D) Electric power

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

3. Draw the symbols of the following components used in an electrical circuit
   i) Wire crossing without joint.
   ii) Rheostat.
4. "North Pole of a bar magnet repels when brought near one end of a current carrying solenoid". To which end of the battery that terminal of solenoid is connected?

III. Answer the following questions **3 × 2 = 6**

5. Observe and analyse the diagrams given below. Determine the type of the lens "X" used for the correction of the depicted defect of vision here. Give suitable reason for your answer.



i) Defect of vision ii) Correction to it

6. What is magnetic field? Magnetic field lines do not intersect each other. Why?
7. a) Define 'Electric resistance'.
   b) How is an Ammeter and a Voltmeter connected in an electric circuit?

OR

   a) State Ohm's Law.
   b) List any two factors on which resistance of a conductor depends.

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

8. Draw the diagram to show the image formation when an object is placed between the principal focus (F_1) and the optic centre (O) of a convex lens. Mention the position and the nature of the image formed.

9. What is the tyndall effect? Give two illustrations.

OR

Stars do not twinkle. Why?

10. Explain the function of earthing wire.

OR

Write an activity that explains 'a current carrying conductor experiences a force when it is placed in a magnetic field'.

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

11. a) Write an activity that explains the refraction of light through a glass slab.
    b) State the laws of reflection.

OR

    a) What is Magnification? If the magnification of an image produced by the lens is + 2, then mention the type of the lens.
    b) The refractive index of medium "A" is lesser than the medium "B". Then which medium is optically denser? In which medium the speed of light is more?

12. (a) A bread toaster rated 350 W is used for 15 hours a day. An electric iron box rated 250 W is used for 5 hours a day. Calculate the total cost of using these appliances for 30 days if the cost for 1 kWh is ₹4?
    (b) In which method the resistor R_1 and R_2 could be connected so that the equivalent resistance of that electric circuit becomes low? What is the change in the value of current in the circuit by this type of connection?

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. **3 × 1 = 3**

13. The acid present in the stinging hair of nettle plant leaves is

(A) Methanoic acid (B) Oxalic acid
(C) Citric acid (D) Lactic acid

14. Zinc metal is added to the solution obtained by the chemical reaction between iron nail and the copper sulphate solution. A correct chemical equation that represents the reaction between that solution and zinc among the following is:

(A) $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$
(B) $Zn + FeSO_4 \rightarrow ZnSO_4 + Fe$
(C) $Cu + ZnSO_4 \rightarrow CuSO_4 + Zn$
(D) $Fe + ZnSO_4 \rightarrow FeSO_4 + Zn$

15. An unsaturated compound that has triple bond between carbon atom is

(A) Methane (B) Ethane
(C) Ethene (D) Ethyne

VII. Answer the following questions : 3 x 1 = 3

16. Silver ornaments kept open to the air lose their lustre gradually. Why?
17. What is thermite reaction?
18. Write the electron dot structure of methane.

VIII. Answer the following questions: 3 x 2 = 6

19. Observe the following chemical reactions.
    i) 1 M sodium hydroxide is reacting with 1M hydrochloric acid.
    ii) 1M magnesium hydroxide is reacting with 1M sulphuric acid.

    Determine the molecular formula and the nature of the salts obtained in both of the chemical reactions.
20. Write two differences between calcination and roasting.

    OR

    Hydrogen gas is not evolved when a metal reacts with nitric acid. Why? Explain.
21. Write the molecular and structural formulae of the third member of a homologous series that has -COOH as a functional group.

IX. Answer the following questions : 3 x 3 = 9

22. Write the Balanced equations for the following chemical reactions.
    i) Combustion of natural gas
    ii) Reaction of potassium metal with water.
    iii) Nitrogen gas reacts with Hydrogen gas.

    OR

    The reaction of barium chloride with sodium sulphate solution is an example for what type of chemical reaction? Give reason for your answer? Write the balanced chemical equation for this reaction.
23. Draw the diagram 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.
24. Explain the formation of the ionic bond between sodium and chlorine atoms.

    OR

    Give scientific reasons for the following:
    a) Ionic compounds do not conduct electricity at solid state.
    b) Sodium, Potassium and Lithium metals are stored in kerosene.
    c) Though aluminium is a reactive metal, it is still used to make utensils.

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

25. a) Carbon atoms do not form C^{4+} anions or C^{4-} cations. Why ?
    b) Explain the mechanism of cleansing action of soap.

PART – C
(BIOLOGY)

XI. 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**

26. The need for suction pressure in plants is
    (A) To overcome the difference in ion concentration between the root and the soil
    (B) To transport food in two directions
    (C) To carry water to higher parts
    (D) To remove excess water from the leaves

27. If the roots of a plant grow towards an area of nitrate concentration, it is
    (A) Phototropism
    (B) Hydrotropism
    (C) Thigmotropism
    (D) Chemotropism

28. The microbe that causes syphilis is
    (A) Bacteria
    (B) Virus
    (C) Fungus
    (D) Algae

XII. Answer the following questions : **3 x 1 = 3**

29. Structure of the ventricles is supplementary to the function of the heart in pumping of blood to all the body parts. Justify this statement with a reason.
30. Sexual reproduction causes more variations in the organisms. Why?
31. The contrast and visible traits of pea plants are listed in the below given table. Observe. Write the genotype indicator for the pea plant that produces violet coloured flowers and round seeds.

Type of the seed	Color of the flower
Round (O)	White (W)
Wrinkled (r)	Violet (w)

XIII. Answer the following questions : **2 x 2 = 4**

32. Draw the diagram to show the structure of open stomata and label the following parts.
    i) Guard cells. ii) Stomata
33. Adrenaline secreted to the blood during emergency conditions changes the course of blood circulation. Explain this statement.

XIV. Answer the following questions: **3 x 3 = 9**

34. Draw the diagram to show the structure of human brain and label the following parts
    i) Hypothalamus. ii) Pons

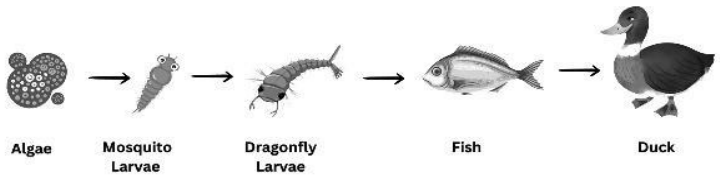
35. A tall pea plant (TT) is crossed with a short pea plant (tt). Express the result obtained in the F_2 generation with the help of checker board and write the types of plants obtained.

OR

a) How is the sex of the child determined in humans? Explain.

b) Write the differences between dominant and recessive inheritance characteristics.

36. a) Observe the food chain given below. Which trophic level organisms get the least energy? Why?



b) At the higher levels of the atmosphere ozone is a life protecting layer'. How?

XV. Answer the following questions : 1 x 4 = 4

37. a) Mention the function of 'bile juice' and 'intestinal juice' in the process is digestion in our body.

b) Write the events that occur during photosynthesis in plants.

OR

a) Name the molecule that forms by the breaking down of glucose in the cytoplasm during the first stage of cellular respiration? How does this molecule again break down in muscle cells? Explain the process of translocation in plants.

XVI. Answer the following questions : 1 x 5 = 5

38. a) What is pollination? Write the differences between the types of pollination.

b) What changes occur in a flower after fertilization?

OR

a) Testes are located in the lower abdomen in men. Why?

b) Explain the role of placenta in the development of an embryo into a child.

c) List any two differences between the methods of reproduction found in spirogyra and planaria.

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