

ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಲಿ

ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು - 560 003

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

**2024-25ರ ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ-1**  
**S.S.L.C. MODEL QUESTION PAPER-1 - 2024-25**

ವಿಷಯ : ವಿಜ್ಞಾನ

**Subject : SCIENCE**

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

( ಅಂಗ್ಲ ಮಾಧ್ಯಮ / **English Medium** )

ವಿಷಯ ಸಂಕೇತ : **83-E**

**Subject Code : 83-E**

ಸಮಯ : 3 ಗಂಟೆ 15 ನಿಮಿಷಗಳು ]

[ Time : 3 Hours 15 Minutes

ಗರಿಷ್ಠ ಅಂಕಗಳು : **80** ]

[ Max. Marks : **80**

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**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.  $2 \times 1 = 2$**

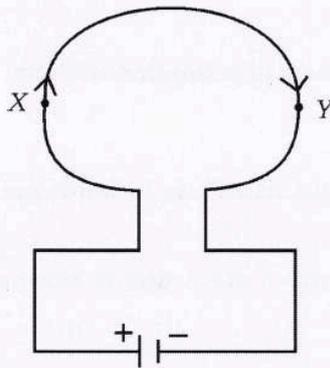
1. The centre of a spherical mirror is
  - (A) centre of curvature
  - (B) pole
  - (C) radius of curvature
  - (D) aperture
  
2. Ohm's law gives the relationship between
  - (A) potential difference and electric charge
  - (B) potential difference and resistance
  - (C) electric current and potential difference
  - (D) electric current and electric power

- II. Answer the following questions :  $2 \times 1 = 2$**

3. Draw the symbol diagram of rheostat/variable resistance used in an electric circuit.
  
4. Write any two properties of magnetic field lines.

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

5. What is long sightedness ( Hypermetropia ) ? Mention the two causes for this defect.
6. Observe the circuit diagram given below. Answer the questions given.



- i) Mention the direction of magnetic field that forms around at the points 'X' and 'Y'.
- ii) State the rule that helps to decide the direction of magnetic field.
7. 'Connecting electrical appliances in parallel in domestic electric circuits is better.' Give two reasons for this measure.

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

8. Draw the ray diagram for the image formation in a convex lens when the object is placed at  $2F_1$ . Mention the position and the nature of the image formed.  
(  $F_1$  : Principal focus of the lens )
9. What is dispersion of light ? Explain the formation of rainbow in the nature.

**OR**

What is Tyndall effect ? The colour of the clear sky is blue. Why ? Explain.

[ Turn over

10. Explain an experiment to show that a current carrying conductor experiences a mechanical force when it is placed in a magnetic field.

**V. Answer the following questions :**

**2 × 4 = 8**

11. a) State the laws of refraction of light.
- b) A ray of light travelling in kerosene enters obliquely into water. Does that light ray bend towards the normal or away from the normal ?  
Why ?  
( Refractive indices of water and kerosene are 1.33 and 1.44 respectively )

**OR**

- a) State the laws of reflection of light.
- b) Magnification of a mirror is + 1. What does it mean ? Mention the type of this mirror.
12. An electric heater connected to a 220 V generator draws a current of 10 A.  
What is the power of the electric heater ? If it is used for 8 hours a day then calculate the total cost of using it for 30 days at Rs. 5.00 per 1 kWh.

**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.  $3 \times 1 = 3$**

13. The electrolysis of water to form hydrogen and oxygen gases is
- (A) an endothermic reaction
  - (B) a displacement reaction
  - (C) an exothermic reaction
  - (D) a redox reaction
14. The number of carbon and hydrogen atoms that are present in the molecule of fifth member of alkene is
- (A) five and ten
  - (B) five and twelve
  - (C) six and twelve
  - (D) six and six
15. The property of carbon atom to form bonds with other carbon atoms, to give rise large molecules is
- (A) Allotrophism
  - (B) Catenation
  - (C) Isomorphism
  - (D) Substitution

[ Turn over

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

16. How can rancidity be controlled ?
17. The pH value of an antacid is more than 7. Give reason.
18. The conversion of ethanol into ethanoic acid is called oxidation reaction.  
Why ?

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

19. What are structural isomers ? Write the structural isomers of butane.

**OR**

What are functional groups ? Name the functional group present in propanal and propanol.

20. How do blue and red litmus papers help to determine the nature of acids and bases ?
21. Write any two differences between saturated hydrocarbons and unsaturated hydrocarbons.

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

22. Draw the diagram of the arrangement of apparatus to show the action of steam on a metal. Label the following parts :

i) Metal sample

ii) Hydrogen gas

23. Write the balanced chemical equations for the following chemical reactions :

i) Burning of natural gas

ii) Reaction of potassium metal with water

iii) Reaction of iron with copper sulphate solution.

**OR**

What is the type of chemical reaction in which barium chloride solution reacts with aluminium sulphate solution ? Write the balanced chemical equation for this reaction.

24. You are provided with the substances NaOH, Ca(OH)<sub>2</sub>, H<sub>2</sub> and Cl<sub>2</sub>.

Which of these materials will be chosen to prepare bleaching powder ?

Write the chemical name and the molecular formula of bleaching powder and mention two uses of it.

[ Turn over

**X. Answer the following question :**

**1 × 4 = 4**

25. a) Explain the extraction of zinc metal from its sulphide ore.
- b) Show the formation of sodium chloride molecule by transfer of electrons.

**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 type of reproduction during plasmodium is

- (A) budding
- (B) fragmentation
- (C) vegetative propagation
- (D) multiple fission

27. Pyruvate  $\xrightarrow{\text{Muscle cell}}$  X + energy ;  
( in cytoplasm )

Here 'X' represents

- (A) Oxygen                      (B) Ethanol  
(C) Lactic acid                (D) Carbon monoxide
28. Observe the female reproductive structures given in figure A and figure B.  
The correct statement related to these figure is

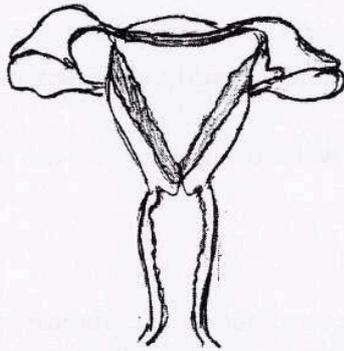


Figure A

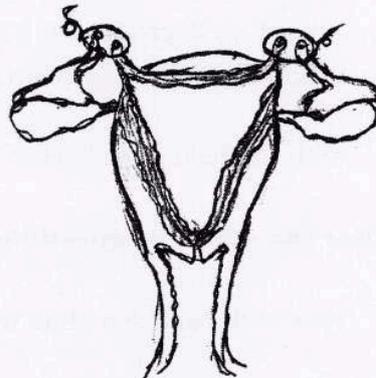


Figure B

- (A) Fertilization of egg is possible in both of the structures  
(B) Fertilization of egg is possible only in the structure of figure-B  
(C) Fertilization of egg is possible only in the structure of figure-A  
(D) Fertilization of egg is not possible in both of the structures

**XII. Answer the following questions :**

**3 × 1 = 3**

29. Draw the diagram of open stomata.
30. Sexual reproduction leads to more variations. Why ?
31. Use of non-biodegradable substances should be minimised. Why ?

[ Turn over

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

32. How is ozone layer formed ? Protection of ozone layer is necessary. Why ?  
Give reasons.

**OR**

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

33. Round seed producing (  $RR$  ) pea plant is hybridised with wrinkled seed producing (  $rr$  ) pea plant. Mention the results obtained in  $F_2$  generation with the help of a checker board. Write the genotypic ratio of plant types.

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

34. How is the sex of a child will be determined in the human beings ?

**OR**

How do Mendel's experiments show that the parental traits are inherited independently to the offsprings of next generation ?

35. How are phototropism, thigmotropism and chemotropism coordinated in the apparent movement of creepers ( climbing up plants ) towards particular direction ?

**OR**

What is the role of insulin, estrogen and thyroxine hormones in our body ?

36. What is cross pollination ? What are the changes that occur in flower after fertilization.

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

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

following parts :

- i) Cerebrum
- ii) Cerebellum.

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

38. a) Explain the process of digestion in the small intestine of man.

Mention the importance of double circulation in our body.

b) What are the differences between xylem and phloem tissues ?

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