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FOR KARNATAKA CLASS 10 PREPARATION

Karnataka SSLC Model Question Paper 2027 for Science (Paper 2, English Medium)

EXAM	YEAR	TYPE	SUBJECT
Karnataka Class 10	2027	Sample Paper	Science

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 –2

S.S.L.C. MODEL QUESTION PAPER-2: 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

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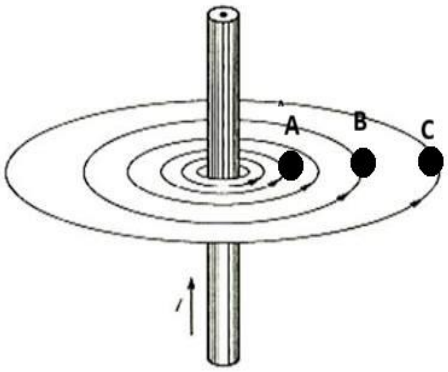
PART – A
(PHYSICS)

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. **2×1=2**

1. The SI unit of Power

(A) Ampere (A)
(B) Ohm(Ω)
(C) Volt (V)
(D) Watt (W)

2. The given below diagram shows the pattern of the magnetic field lines produced when the electric current flows through a straight conductor. The magnitude of the magnetic field at the points A, B, and C is:



(A) Equal at all points.
(B) Maximum at C and minimum at A.
(C) Maximum at A and minimum at C.
(D) Greater at B than at A and C.

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

3. Convex mirror is used as rear view mirror in vehicles. Why?
4. How does a fuse will be connected in an electric circuit?

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

5. Write the schematic diagram of an electric circuit comprising cell, electric bulb, ammeter and plug key.
6. Two electric iron boxes A and B with metal casings are connected to a two-pin plug and a three-pin plug respectively. Which of these iron box is safer to use? Justify your answer.
7. Draw the diagram that shows the recombination of the colours of white light spectrum.

83-E

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

8. Explain the activity to determine the focal length of a concave mirror

OR

The refractive indices of the media A and B are η_A = 1.36 and η_B = 1.65 respectively

i) Which medium is more dense?

ii) In which medium the speed of light is more? Justify your answer.

9. What is presbyopia? Write the causes and remedy for this defect?

OR

What is Tyndall effect? Give any two illustrations for this effect.

10. (a) State Right-Hand Thumb Rule.
(b) Write any two properties of magnetic field lines.
(c) Which factor helps to determine the relative strength of a magnetic field

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

11. The resistivities (ρ) of three different materials (X, Y, Z) at 20°C are given below:

Material X	$1.6 \times 10^{-8}\ \Omega m$
Material Y	$100 \times 10^{-6}\ \Omega m$
Material Z	$10^{10}\ \Omega m\ to\ 10^{14}\ \Omega m$

Read and analyse. Which of these materials can be used as:

(i) an electrical wire,

(ii) in electrical heating coil, and

(iii) as an electrical insulator? Give reasons for your choices.

OR

a) Write any two differences between the series connection and parallel connection of resistors.

b) On what factors does the resistance of a conductor depend?

12. An object of height 6 cm is placed at a distance of 30 cm vertically on the principal axis of a convex lens. An image is formed at a distance of 20 cm from the lens. Then,

(i) Find the focal length of the lens.

(ii) Find the size of the image formed and write the nature of the image.

[Turn over

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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 the alphabet. **3 × 1 = 3**

13. The functional group present in propanoic acid is
    (A) -CO (B) -OH
    (C) -CHO (D) -COOH

14. A situation where chemical change occurs is, when
    (A) sugar is dissolved in water
    (B) paper is being torn
    (C) grape undergoes fermentation
    (D) water is boiled

15. The surface of silver materials exposed to the air for a long time turns black. The component of the air responsible for this change is
    (A) Oxygen (B) Carbon di oxide
    (C) Sulphur (D) Nitrogen

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

16. Which precipitate is produced when air is blown into lime water?
17. By which methods moderately reactive metals are extracted?
18. Write the electron dot structure of methane.

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

19. When an aqueous solution of 'P' is subjected to electrolysis in the chlor-alkali process the gases 'Q' and 'R' will be released at cathode and anode respectively then,
    i) Name P, Q and R.
    ii) Write any one use of the gas Q.

20. The hydrogen gas that is released when calcium metal reacts with water does not burn. What is the reason for this? Write a chemical equation for this reaction.

    OR

    Write any two differences between the physical properties of metals and non-metals.

21. Give reason:
    a) Covalent compounds are generally poor conductors of electricity.
    b) Ethanoic acid known as glacial acetic acid.

    OR

    $CH_4 + Cl_2 \rightarrow CH_3Cl + HCl$; Analyse this chemical equation.
    Is this process an addition reaction or substitution reaction? Decide. Justify your decision.

83-E

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

22. Write the chemical equations for the following chemical reactions by using appropriate atomic symbols and molecular formulas. Identify and name the type of each chemical reaction.

i) Calcium oxide when reacts with water, produces calcium hydroxide.

ii) By reacting lead and copper chloride each other, lead chloride and copper will be formed.

OR

a) Formation of zinc and carbon monoxide due to the reaction between zinc oxide and Coke is considered a redox reaction. Support this statement with reasons and write a chemical equation for this reaction.

b) Any chemical equation is to be balanced. Why?

23. How does tooth decay cause? Explain. How can this be prevented?

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

i) Metal sample

ii) Delivery tube

X. Answer the following questions : **1 x 4 = 4**

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

b) Write the molecular formula and structural formula for the following carbon compounds

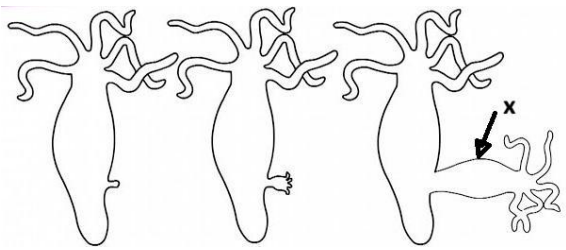
i) Cyclohexane

ii) Pentane

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. Observe the figure below. A correct pair that has the name of the process that produces the structure labelled as X and the name of the organism in which this process is found is



(A) Budding, Sea anemone

(B) Fragmentation, Coral

(C) Budding, Hydra

(D) Fragmentation, Yeast

[Turn over

83-E

27. The byproducts that are produced by the breakdown of pyruvate by using oxygen in the mitochondria are
    (A) Carbon dioxide, water and energy
    (B) Lactic acid and energy
    (C) Ethanol, Carbon dioxide and energy
    (D) Lactic acid, Carbon dioxide and energy

28. In humans, the factor that determine the sex of a child is
    (A) Sex chromosome of mother
    (B) Environmental temperature
    (C) Sex chromosomes of father and mother
    (D) Sex chromosome of father

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

29. Define Menstruation.
30. The pulmonary veins are blocked in a person who has been prone to heart attack. Which specific part of the heart fails to receive the oxygenated blood instantly?
31. Which tropic movements are necessary to bring the growth in the roots and shoots of the plants?

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

32. Draw the diagram to show the structure of nephron and label the bowman's capsule.
33. Name the glands that secrete the following hormones and mention the function of these hormones.
    i) Estrogen ii) Adrenaline

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

34. Draw a diagram of the structure of the human brain. Label the following parts.
    i) Cerebrum
    ii) Medulla
35. Yellow flowering tall pea plant (YYTT) is hybridised with white flowering dwarf pea plant (yytt). Show the result of F_2 generation with the help of a checker board. Write the ratio of the plants obtained here.

OR

Red flowering pea plant (RR) is hybridised with white flowering pea plant (rr). Show the result of F_2 generation with the help of a checker board. Write the phenotypic and genotypic ratio of the plants obtained in F_2 generation.

36. a) Mention any two measures that can be followed to reduce the problems caused while disposing the wastes.
    b) Give an example for the food chain of the grassland ecosystem. If there is an increase in the number of organisms in the second tropic level, how does this affect that food chain?

83-E

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

37. a) Write the main functions of the enzymes given below.
    i) Trypsin
    ii) Lipase

b) Mention the difference between alveoli and villi

OR

a) How are inorganic substances transported from the xylem tissue in plants? Explain.

b) Write any four methods used by plants to eliminate waste materials.

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

38. a) What are the functions of testis and seminal vesicles in the human male reproductive system?

b) How does a fertilized egg in a female develop into an embryo in the uterus? How does this embryo get nourishment in the mother's womb? Explain.

OR

a) What is pollination? Write any two differences between two types of pollination.

b) Mention any two advantages of vegetative propagation.

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