

ಕರ್ನಾಟಕ ಶಾಲಾ ಪರೀಕ್ಷೆ ಮತ್ತು ಮೌಲ್ಯನಿರ್ಣಯ ಮಂಡಲಿ

ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು - 560 003

KARNATAKA SCHOOL EXAMINATION AND ASSESSMENT BOARD
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2023-24ರ ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ

S.S.L.C. MODEL QUESTION PAPER - 2023-24

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

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

(ಆಂಗ್ಲ ಮಾಧ್ಯಮ / **English Medium**)

ಸಮಯ : 3 ಗಂಟೆ 15 ನಿಮಿಷಗಳು]

ವಿಷಯ ಸಂಕೇತ : **83-E**

ಗರಿಷ್ಠ ಅಂಕಗಳು : **80**]

Subject Code : 83-E

CCE-RF : ಶಾಲಾ ವಿದ್ಯಾರ್ಥಿಗಳು / Regular Fresh

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. 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. 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.

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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. $4 \times 1 = 4$

1. The type of the lens used to correct near-sightedness is
 - (A) Convex lens
 - (B) Concave lens
 - (C) Bifocal lens
 - (D) Concavo-Convex lens

2. The rule that helps to determine the direction of magnetic field around a current carrying straight conductor is
 - (A) Right hand thumb rule
 - (B) Fleming's right hand rule
 - (C) Law of magnetic poles
 - (D) Fleming's left hand rule

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3. The colour of the sky from the surface of the moon appeared as
- (A) blue
 - (B) violet
 - (C) black
 - (D) red
4. Resistors of resistance $100\ \Omega$ each are connected in parallel in an electric circuit. Then the number of resistors have to be connected to obtain $25\ \Omega$ as equivalent resistance is
- (A) 10
 - (B) 5
 - (C) 40
 - (D) 4

[Turn over

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CCE RF**II. Answer the following questions :****2 × 1 = 2**

5. Is it possible to connect a refrigerator rated 1320W to a domestic circuit of 220 V with an electric fuse rated 5 A ? Clarify the reason for your answer.
6. What is the function of the mirror used in solar cooker ?

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

7. Draw the diagram of a simple electric motor and label 'Split rings'.
8. Bio-gas is an excellent fuel. How ?

OR

Mention the advantages and the limitations of wind energy.

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

9. 'Earthing of the electric instruments having metallic surface is must.' How is this measure be justified ?

OR

Which measures have to be taken to avoid the overload in domestic electric circuits ?

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10. Draw the ray diagram for the image formation in a convex lens when the object is placed between F_1 and $2F_1$. Mention the position and the nature of the image formed with the help of ray diagram.

(F_1 : Principal focus of the lens)

11. Explain the following natural phenomena :

- i) Twinkling of stars
- ii) Rainbow formation.

OR

- a) How does the eye lens accommodate to see the nearby objects and distant objects ? Explain.
- b) The overhead sun at noon appears as white. What is the reason for this ?

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

12. a) What is reflection of light ? State the two laws of reflection.
- b) Define the following terms related to the spherical mirrors :
- i) Aperture
 - ii) Pole of the mirror

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

13. a) State Joule's law of heating. How does a bulb work based on this law ? Explain.
- b) What is electric potential difference ? Name the instrument used to measure the potential difference. How is this instrument be connected in an electric circuit ?

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. $2 \times 1 = 2$

14. A type of chemical reaction in which a single product is formed by two or more reactants is

- (A) chemical decomposition
- (B) chemical combination
- (C) chemical displacement
- (D) chemical double displacement

15. Atomic number of chlorine is 17. The period of this element in the modern periodic table is

- (A) 1st period
- (B) 2nd period
- (C) 3rd period
- (D) 4th period

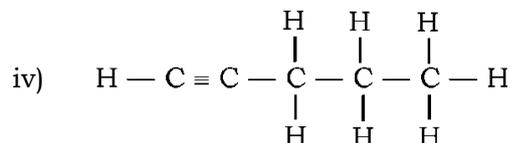
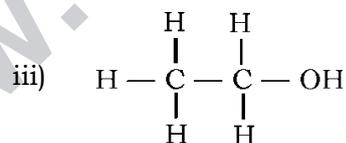
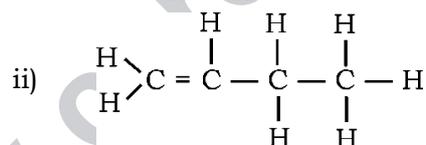
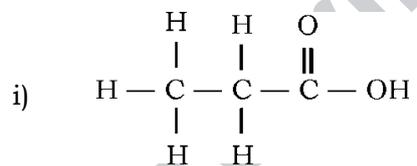
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VIII. Answer the following questions :
4 × 1 = 4

16. What is dilution of acids ?
17. What could be the pH value of a salt that is commonly used to remove strong oil stains in any source ? Why ?
18. What is the reason for the formation of water when moderately reactive metals react with nitric acid ?
19. Though concentrated sulphuric acid is not a reactant during the conversion of ethanol to ethene, its presence is necessary. Why ?

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

20. Name the carbon compounds having the following structures.



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21. "Thermite process is useful to join railway tracks." Why ?
Substantiate this statement with suitable explanation.

OR

Can zinc carbonate and cinnabar ores be converted into their oxides by roasting ? Justify your answer with reason.

22. Observe the table given below. Answer the given questions :

<i>Element</i>	<i>B</i>	<i>O</i>	<i>C</i>	<i>Li</i>	<i>K</i>
<i>Atomic Number</i>	5	8	6	3	19

- i) Choose the elements that have the smallest and the largest atoms.
- ii) Predict the formula of potassium oxide with reason.

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

23. a) What are saturated carbon compounds ?
- b) Define the following :
- i) Homologous series
- ii) Esters.

OR

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- a) What are micelles ?
- b) What is covalent bond ? Write any two properties of covalent compounds.

24. 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.

25. In which of the following chemical reactions water insoluble precipitate will be formed ? Explain. Which water soluble products are formed in both of the reactions ?

- i) Barium chloride reacted with sodium sulphate.
- ii) Zinc reacted with hydrochloric acid.

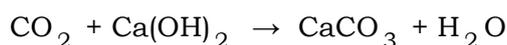
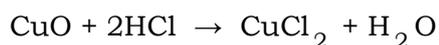
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XI. Answer the following question :**1 × 4 = 4**

26. a) Observe the following chemical equations and answer the question given :



Which property of metallic oxide and non-metallic oxide is expressed here ? Explain.

- b) How sodium carbonate is prepared ? Explain with suitable chemical equations. Mention any two uses of this salt.

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

27. The process that occurs in the production of new individuals of planaria is

- (A) binary fission
- (B) regeneration
- (C) budding
- (D) fragmentation

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28. A phenomenon that does not direct the speciation is

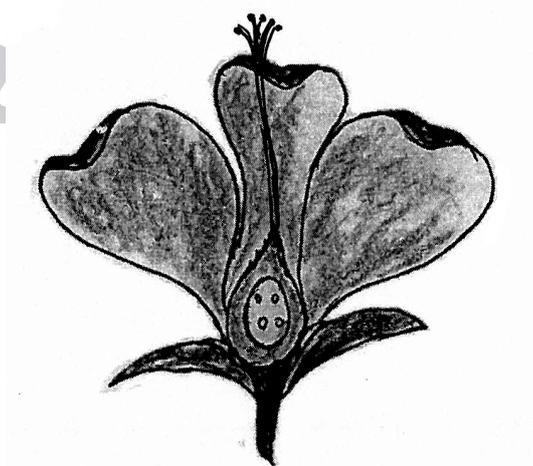
- (A) Geographical isolation
- (B) Genetic drift
- (C) Natural selection
- (D) DNA replication

XIII. Answer the following questions :

2 × 1 = 2

29. Which tropisms are necessary to bring the growth in the shoots and roots of plants ?

30. What type of pollination occurs in the given below type of flower ? Why ?



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

31. What are fossils ? What are the methods of estimating the age of fossils ?

32. Classify the following into natural and artificial ecosystems :

Rainforest, Crop field, Lake, Pond

33. Existing in enormous number and the tiny structures of both 'alveoli' and 'nephrons' are complementary to their work efficiency. How ?

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

34. a) What are the problems caused by the construction of large dams ?

b) Who are the stakeholders of forests ?

35. a) Sexual reproduction in higher organisms brings the genetic stability among the population of species. How is it possible ?

b) Surgical method of contraception is better than mechanical method of contraception. Why ?

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36. a) How homologous organs are differ from analogous organs ?
- b) “An individual cannot pass its lifetime experiences to its progeny.” Explain with an illustration.

OR

Round, yellow seed producing (*RRYY*) pea plant is crossed with wrinkled, green seed producing (*rryy*) pea plant. Show the results obtained in F_2 generation with the help of checker board and mention the ratio of the plant types produced.

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

37. a) Which are the events that occur during photosynthesis ?
- b) What is the importance of transpiration in the transportation of salts ? Mention the different strategies found in plants during the excretion of wastes.

OR

- a) What is the function of buccal cavity and stomach in the digestion of food in our body ?
- b) Mention the role of arteries and capillaries in the transportation of materials in our body.

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

- i) Cerebellum
- ii) Hypothalamus.

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