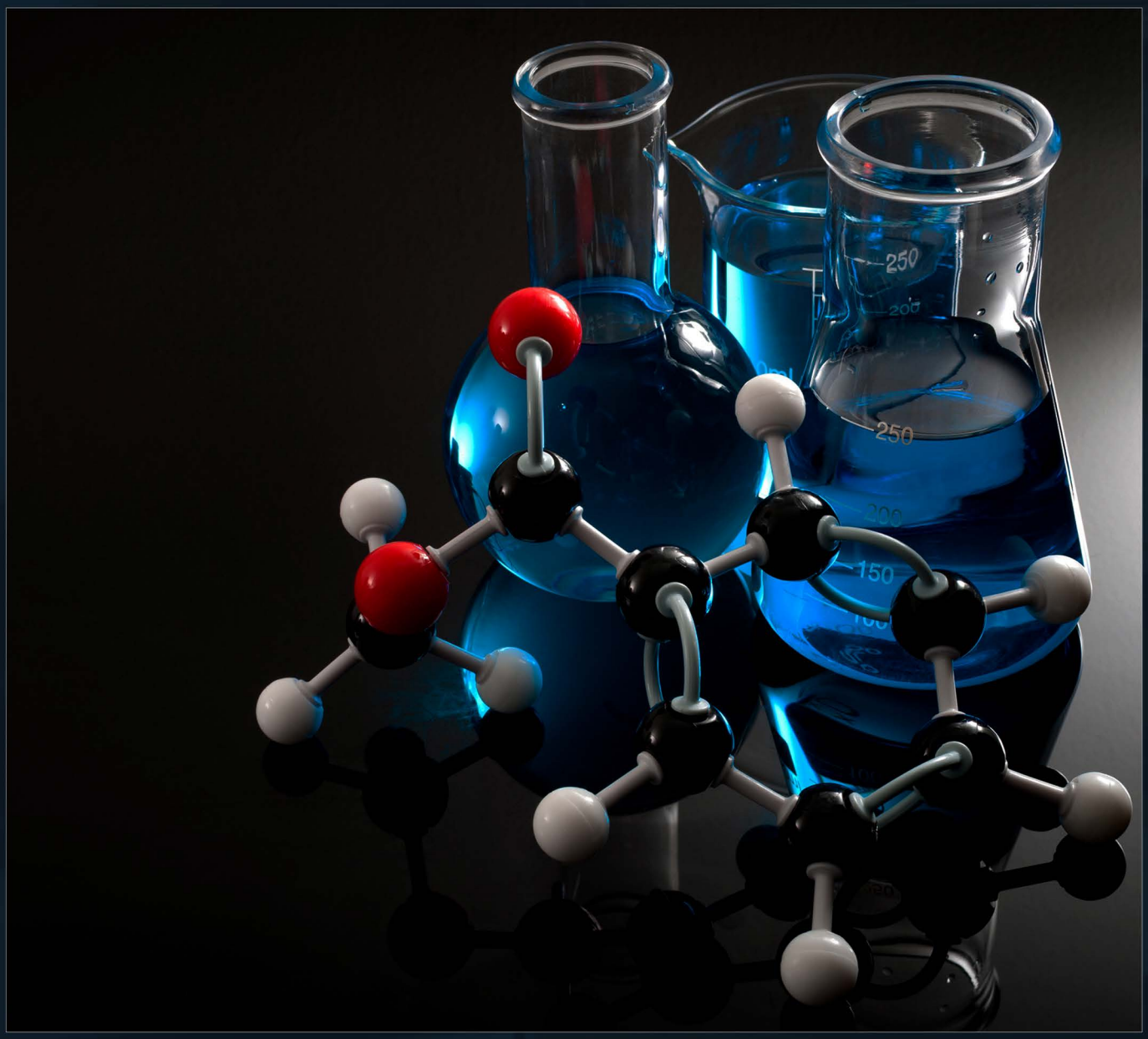
CAREERS360



# KSEAB SSLC

## Science Model Paper 2021-22

# ಕರ್ನಾಟಕ ಪ್ರೌಢಶಿಕ್ಷಣ ಪರೀಕ್ಷಾ ಮಂಡಳಿ

ಮಲ್ಲೇಶ್ವರಂ, ಬೆಂಗಳೂರು–560003.

# KARNATAKA SECONDARY EDUCATION EXAMINATION BOARD

Malleshwaram, Bengaluru – 560003.

## 2021–22 ಮಾದರಿ ಪ್ರಶ್ನೆಪತ್ರಿಕೆ

## 2021-22 MODEL QUESTION PAPER

**Subject/ವಿಷಯ : SCIENCE/ವಿಜ್ಞಾನ**
**Time : 3 hrs. 15 mins.**
**ಸಮಯ: 3 ಗಂಟೆ 15 ನಿಮಿಷ**

**ವಿಷಯದ ಸಂಕೇತ: 83E**
**Subject Code : 83E**
**ಗರಿಷ್ಠ ಅಂಶಗಳು : 80**
**Max. Marks : 80**

**Regular Fresh**

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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 objective and subjective types of 38 questions.

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. Check whether all the pages of the question paper are intact.

4. Follow the instructions given against both the objective and subjective types of 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.

# 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. 2x1=2**

**1. The diameter of the reflecting surface of spherical mirror is**

A) Optical Centre B) Centre of Curvature

C) Aperture D) Principal axis

**2. An electric motor takes 5A from a 220V electric source. The power of the motor is**

A) 1100W B) 44W

C) 225W D) 440W

**II Answer the following questions. 3x1=3**

3. If the focal length of a spherical mirror is 15cm. Find the radius of curvature ?

4. Mention any two disadvantages of fossil fuels.

5. What is an electric circuit ?

**III Answer the following questions. 3x2=6**

6. How does overloading and short-circuit occur in an electric circuit? Explain. What is the function of a fuse during this situation ?

7. Draw the schematic diagram of a biogas plant.

8 An electric lamp whose resistance is 40Ω and conductor of 8Ω resistance are connected in series to 12V battery in an electric circuit. Calculate the total resistance of the circuit and the current flowing through the circuit.

**IV Answer the following questions. 3x3=9**

9. Draw the ray diagram of image formed when the object is kept beyond $2F_1$ of the convex lens. With the help of the diagram, mention the position and nature of the image formed. ($F_1$ : principal focus of the lens)

OR

Draw the ray diagram when of image formed the object is kept beyond C of the concave mirror. With the help of the diagram mention the position and nature of the image formed. (C : Centre of curvature of mirror).

10. What is electric potential difference? What is the SI unit of potential difference ? Name the device used to measure the potential difference.

11. An object is kept at a distance of 30cm from a diverging lens of focal length 15cm. At what distance the image is formed from the lens? Find the magnification of the image.

**V Answer the following questions 2x4=8**

12. Explain Faraday's experiment of magnet and coil. State "electromagnetic induction" with the help of this experiment

OR

State the Fleming's right hand rule. How can we increase the amount of electric current produced in the electric generator ? Write any two differences between electric generator and electric motor?

13. a) List the uses of Convex mirror and Concave mirror.

    b) Define principal focus and radius of curvature of a convex mirror.

## PART - B

## CHEMISTRY

**VI Four alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write to the complete answer along with its letter of alphabet. 2x1=2**

**14. As the $p^H$ value of a solution increases.**

A) number of $H^+$ ions increases B) number of $OH^-$ ions increases

C) number of $OH^-$ ions decreases D) equal number of $H^+$ and $OH^-$ ions

**15. The amphoteric oxide among the following is**

A) Potassium oxide B) Sodium oxide

C) Calcium oxide D) Zinc oxide

**VII Answer the following question. 1x1=1**

16. State Newlands' law of octaves.

**VIII Answer the following questions. 2x2=4**

17. Draw the diagram of the arrangement of apparatus to show the electrolysis of water and label the 'graphite rod'.

18. Write the molecular formula and two uses of each of the following compounds:

a) Washing soda

b) Bleaching powder

OR

Name the two gases liberated in Chlor-alkali process. Write one use of each.

**IX Answer the following questions. 3x3=9**

19. Draw the diagram of arrangement of the apparatus 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) soap solution

20. The reaction of lead with Copper Chloride solution is an example for which type of chemical reaction? Why? Write the balanced chemical equation for this reaction.

    OR

    Write the balanced chemical equations for the following reactions and identify the exothermic and endothermic reaction.

    i) heating of ferrous sulphate crystals.

    ii) calcium oxide reacts with water.

21. The atomic numbers of two elements are 12 and 16 respectively. Do you keep these two elements in the same period of the modern periodic table? Justify your answer. Which one of these two elements is more electropositive? Why?

**X Answer the following question. 1x4=4**

22. a) Ionic compounds in solid state do not conduct electricity, but in molten state are good conductors of electricity. Why ?

    b) Write the formation of magnesium chloride ($MgCl_2$) with the help of electron dot structure.

**XI Answer the following questions.** **1x5=5**

23. 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) propanoic acid ii) cyclohexane ii) pentane

## 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. 4x1=4**

**24. The plant hormone that causes wilting of leaves is**

A) cytokinin B) auxin

C) abscisic acid D) gibberellin

**25. The correct sequence of reproductive stages occur in flowering plants is**

A) gametes, zygote, embryo, seed. B) zygote, gametes, embryo, seed.

C) seed, embryo, zygote, gametes. D) gametes, embryo, zygote, seed.

**26. The site of complete digestion of carbohydrates, proteins and fats is**

A) large intestine B) stomach

C) liver D) small intestine

**27. The unfertilized egg of human female contains**

A) One 'Y' Chromosome B) One 'X' Chromosome

C) 'XX' Chromosomes D) 'X' and 'Y' Chromosomes

**XIII Answer the following questions. 4x1=4**

28. The folding up of leaves of a sensitive plant (touch me not plant) on touching with a finger is not a tropism. Why ?

29. What are analogous organs ?

30. What is the role of decomposer in an ecosystem ?

31. Why are traits acquired during its lifetime of an individual not inherited?

**XIV Answer the following questions. 3x2=6**

32. Draw the diagram showing the structure of nephron and label bowman's capsule.

33. Write any two differences between biodegradable and non biodegradable substances

OR

Write a grassland food chain and name the different tropic levels in it.

34. "The flow of energy in an ecosystem is unidirectional" How ? Justify.

**XV Answer the following questions. 3x3=9**

35. Write the flowchart to show the breakdown of glucose by various pathways in the cytoplasm of living organisms.

OR

Explain the function of stomach in the human digestive system.

36. Explain the human male reproductive system.

37. The tall pea plant bearing red colour flowers (TTRR) is crossed with dwarf pea plant bearing white flowers (ttrr). Represents the result obtained in $F_2$ generation of dihybrid cross with the help of checker board. Mention the ratio of different plants obtained in $F_2$ generation.

OR

What is Speciation? Mention the factors could lead to the rise of a new species.

**XVI Answer the following question.** **1x4=4**

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

    i) cerebrum ii) cerebellum

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