

**DEPUTY DIRECTOR OFFICE, SCHOOL EDUCATION DEPARTMENT, TUMKURU (SOUTH) DISTRICT
2023—24 SSLC PRACTICE QUESTION PAPER**

**SUBJECT: SCIENCE
SUBJECT CODE: 83E**

**Max. Marks: 80
Time: 3hours 15minutes**

PART-A (PHYSICS)

I. For every question given below or an incomplete statement four alternative answers are given, choose and write the correct answer with the variable given: (4x1=4)

1. The instrument used to change resistance in an electric circuit is
a) Voltmeter b) Ammeter c) Rheostat d) Galvanometer
2. If the focal length of a lens is +0.50m the power and type of lens is
a) +2.0D and Concave lens b) +2.0D and Convex lens c) -2.0D and Concave lens d) -2.0D and Convex lens
3. Inside a solenoid magnetic field lines are parallel, the magnetic field in a solenoid is
a) Very high b) uniform c) zero d) due to current flow
4. The inside of a solar cooker is painted black in color because
a) Reflects light b) converges solar light c) Avoids rust d) absorbs more heat

II. Answer the following questions: (2x1=2)

5. Convex mirrors are commonly used as rear view mirror, why?
6. When white light passed through a prism disperses, Name the colors that bends the least and the most.

III Answer the following questions: (2x2=4)

7. Tungsten is used in electric bulbs, why?

OR

In electric toaster and iron box which are devices of heating effect of electric current, coils are made of alloys instead of pure metals. Why?

8. Draw the ray diagram of the image formed, when an object is placed in front of a convex lens between $2F_1$ and F_1 , from the diagram write the position and nature of the image formed.

IV. Answer the following questions: (3x3=9)

9. An object having 12cm focal length is placed in front of a concave mirror on the principal axis. If the object is 18cm away from the mirror, calculate the image distance and magnification and mention the nature of the image formed.

OR

A diverging lens having 15cm focal length is placed 30cm away from the object then at what distance is the image formed. Also find the magnification of the image.

10. Name the main constituent of biogas. Write the characteristics of biogas that makes it a good fuel.
11. a) What is Myopia? mention any two causes for myopia.
b) Which lens is used to correct myopia.

OR

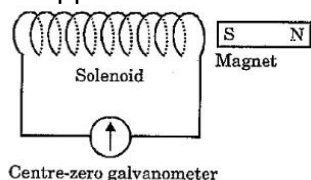
- a. What is hypermetropia? Mention two causes of hypermetropia.
- b. Which lens is used to correct hypermetropia.

V. Answer the following question (1x4=4)

12. a) According to Joules law of heating effect. Write the factors that depend on the heat produced in the resistor. And also write formula of joule's law.
b) Arranging electrical appliances in parallel is advantageous than series, why?

VI. Answer the following: (1x5=5)

13. Observe the given diagram carefully. As shown in the diagram the insulated copper coil is connected to the galvanometer. What happens when a bar magnet is?



- a) moved into the copper coil.
- b) moved out of the coil.
- c) when a bar magnet is placed stationary, mention the changes with suitable reasons.
- b) What are the precautions to be taken to avoid overloading in a domestic electric circuit?

Part-B(CHEMISTRY)

VII. For every question given below or an incomplete statement four alternative answers are given, choose and write the correct answer with the variable given : (2x1=2)

14. Chips packets are filled with nitrogen gas
 a) to avoid corrosion b) to avoid rancidity c) to avoid oxidation d) to avoid reduction
15. In modern periodic table elements belonging to same period like sodium, magnesium, aluminum and silicon's atomic number is in the order of 11, 12, 13, 14 respectively, the element having the least atomic size is
 a) sodium b) magnesium c) aluminum d) silicon

VIII. Answer the following: (4x1=4)

16. $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$
 In the above reaction Name, the reactants that is oxidized and reduced.
17. What is neutralization reaction?
18. Write the molecular formula and structural formula of an alkene having 5 carbon atoms.
19. Give reason for generally using metals in preparation of cooking utensils.

IX. Answer the following questions: (3x2=6)

20. Draw the diagram of electrolysis of water and label graphite rod.
21. How is bleaching powder prepared? write any two of its uses.

OR

- How is plaster of Paris prepared? Write any two uses of plaster of Paris.
22. What is thermite reaction? List any two uses of thermite reaction.

X. Answer the following questions: (3x3=9)

23. 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 and label the following parts a) zinc granules b) delivery tube
24. With the help of electron dot structure explain the formation of sodium chloride (NaCl).

OR

- Using electron dot structure explain the formation of Magnesium chloride (MgCl_2).
25. In the given table atomic radii of 2nd period elements are given

2 nd period elements	B	Be	O	N	Li	C
Atomic radii	88	111	66	74	152	77

- a) Arrange these atomic radii in decreasing order.
- b) Which elements have largest and smallest radii.
- c) In a period as we move from left to right how does the atomic radii change? Give reason.

XI. Answer the following questions (1x4=4)

26. a) When ethanol is heated to 443K temperature with excess of conc sulphuric acid ethane is produced, what is the role of sulphuric acid in this reaction. Write the balanced chemical equation of this reaction.
- b) Explain how soaps clean clothes.

Part—C (BIOLOGY)

XII. For every question given below or an incomplete statement four alternative answers are given, choose and write the correct answer with the variable given: (2x1=2)

27. The hormone that inhibits plant growth is
 a) Auxin b) Gibberellin c) Abscic acid d) cytokinin
28. Among the following which of the pairs are biodegradable
 a) Vegetable waste, plastic cover b) boiled food waste, glass pieces
 c) DDT and Chemical materials d) vegetable waste and boiled food waste

XIII. Answer the following questions:

(2x1=2)

- 29. Why is thyroxine called personality hormone?
- 30. What is bio magnification?

XIV. Answer the following questions:

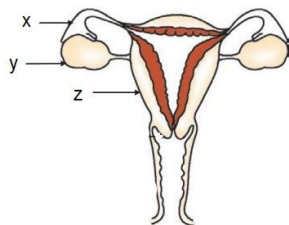
(3x2=6)

- 31. Mention the steps of photosynthesis.
- 32. Draw the diagram showing the longitudinal section of a flower and label ovary
- 33. What is speciation? List the factors that lead to speciation.

XV. Answer the following questions:

(3x3=9)

- 34. The pea plants that are tall and bear red flowers (TTRR) were crossed with short and white flower (ttrr) bearing plants. Represent the result obtained in F₂ generation of dihybrid cross with the help of a checker board and write the ratio obtained in F₂ generation.
- 35. Environmentalists oppose the construction of large dams which leads to social, economic and environmental problems. Give reasons
- 36 In the given Female reproductive systems diagram identify and label X, Y, Z and mention its functions



OR

- a) Mention the important function of placenta.
- b) How does the fetus attain nutrition in the mother's body?

XVI. Answer the following

(2x4=8)

- 37. a. Mention the functions of hydrochloric acid in the process of digestion.
- b. Explain the process of digestion in small intestine.

OR

- a) How do plants transport water and minerals?
 - b) Explain how translocation of food particles takes place in plants.
38. Draw the structures of human brain and label the following parts.
- a) Cerebrum
 - b) Cerebellum
