OFFICE OF THE BLOCK EDUCATION OFFICER
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MODEL QUESTION PAPER- 2   2023-24   Class: 9

Duration: 3Hrs 15Min   SUBJECT: SCIENCE   Max Marks: 80

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 correct option.   2x 1 = 2

1. The value of 'g'at the centre of the earth is
   A. 9.8 m/s^2 B. 1m/s^2 C. 17 m/s^2 D. 0 m/s^2

2. Male and female voice is differentiated using
   A. Amplitude   B. Speed   C. Frequency   D. Momentum

3. SI unit of Momentum is
   A. Kgm/s   B. Kg   C. Kgm/s^2 D. m/s

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

4. What happens when the distance between the two objects is doubled and why?
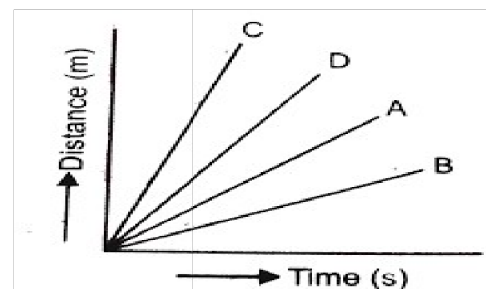
5. Calculate the wave length of a sound wave whose frequency is 220Hz and speed
   is 440m/s in a given medium?

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

6. Motion of objects A, B, C, and D are given in the
    graph
a) Which object has greater speed?
b) which object is moving slowly?

7. What are the various energy transformations that occur in the following
    situations?
a) Imagine you are riding a electric motor bike
b) When switch is ON an electric fan start to rotate

8. Explain ultrasonography?

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IV. Answer the following questions.   4 x 3 = 12
9. Draw or sketch a velocity – time graph of a moving car with the following data and predict type of motion?

Time (seconds)	0	5	10	15	20
Velocity (metre/ second)	0	2.5	5.0	7.5	10

10. State Archimedes's principle? Write its applications? What is Acceleration due to gravity?
11. A ship sends out ultra sound that returns from the seabed detected after 2sec. If the speed of the ultrasound through sea water is 1530 m/s calculate total distance travelled by the ultrasound and distance of the seabed from the ship?
12. Differentiate between Kinetic and potential energy? State the law of conservation of energy? What is power?
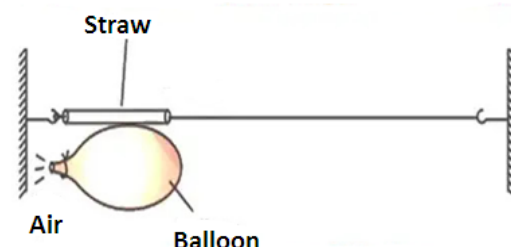
V. Answer the following questions.   1 x 4 = 4
13. a. Observe the diagram and answer thefollowing questions i) Is the balloon moves forward or backward after removing thread tied on the neck of the balloon? Why?
  ii) Name and state law related to the given experiment?
  b.Explain why some of the leaves get detached from a tree if we vigorously shake its branch

Straw
Air
Balloon

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 correct option.   2 x 1 = 2
14. Which of the following is not a chemical change
    A. Rusting of iron   C. Boiling of water
    B. B. Photosynthesis D. Burning of paper
15. Which of the following chemical can damage the layer of O_3 in the atmosphere?
    A.Carbon dioxide   B. CFC   C. Water vapour   D. Nitrogen

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VII. Answer the following questions.   4 x 1 = 4
16. For any substance why the temperature does remains constant during the change of state?
17. When light is passed through a solution Tyndall effect is not observed. Why?
18. Composition of the nuclei of two atomic species X and Y are given as under Give the mass numbers of species X and Y

19. Define Mole concept?

	X	Y
Protons	6	6
Neutrons	6	8

VIII. Answer the following questions.   3 x 2 = 6
20. Name the factors affecting evaporation?
21. Write the distribution of electrons in different shells of Sodium and Chlorine atoms?
22. Describe Bohr's model of the atom?

IX. Answer the following questions.   3 x 3 = 9
23. Draw the arrangement of apparatus showing the separation of two miscible liquids bydistillation?
24. Define melting point and boiling point of a substance? How pressure affects melting and boiling point?
25. Atomic number of an element is element 11. Write the distribution of electrons in different shells. Write the schematic diagram of of its atomic structure? Name the element?

X. Answer the following questions.   1 x 4 = 4
26. a) Write the chemical formula of Calcium oxide and Aluminium chloride?
    b) Name the compounds i) $MgCl_2$ ii) NaOH
    c) Calculate molecular mass of Zinc chloride using the given data
       (Atomic masses Zn = 65 u, Cl = 35.5

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   correct option.   3 X 1 = 3
 27. Waste disposal system of the cell is
 A. Vacuole   B. Mitochondria   C. Lysosome   C. Plastids
28. The Antibiotic only work against

.

A. Viral infections   B. Fungal infections

C. Protozoan infections C. Bacterial infections

29. An example for micronutrient is

A. Calcium   B. Nitrogen C. Potassium D. Zinc

XII. Answer the following questions.   2 X 1= 2

30. What is Immunisation?

31. What is crop rotation? Give one example.

XIII. Answer the following questions.   2 X 2 = 4

  32. Draw the diagram showing the location of meristematic tissues in the plant body and label the following parts.

    a. Apical meristem   b. Lateral meristem

33. Draw the diagram of Hydra and label the following parts.

  a. Tentacles.   b. Foot

XIV. Answer the following questions.   3 X 2 = 6

34. Draw the diagram of neuron and label the following parts.

  a. Cell body   b. Nerve ending

35. a. Differentiate between Acute and Chronic diseases?

  b. "Prevention of diseases is better than their cure", Justify this statement.

XV. Answer the following questions.   2 X 4 = 8

36. What is Nitrogen fixation? Write the Schematic representation of Nitrogen cycle in Nature?

37. Name the following.

a. Amphibions of plant kingdom   b. Spiny skinned Organisms

c. Egg laying mammal   d. Edible fungi.

XVI. Answer the following questions.   1 X 5 = 5

38. a. Give reason :

  1. Plasma membrane is called selectively permeable membrane.

  2. Mitochondria are known as power houses of the cell.

  3. Plant cells are more rigid than animal cells.

 b. Differentiate between prokaryotic and Eukaryotic cell.

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