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. Mass of an object is 10 kg. What is its weight on the earth

A. 9.8 N B. 98N C. 980N D. 0.98N

2. Male and female voice is differentiated using

A. Amplitude B. Speed C. Frequency D. Momentum

3. The SI unit of Force is

A. Kgm/s B. Kg C. K gm/s^2 D. m/s

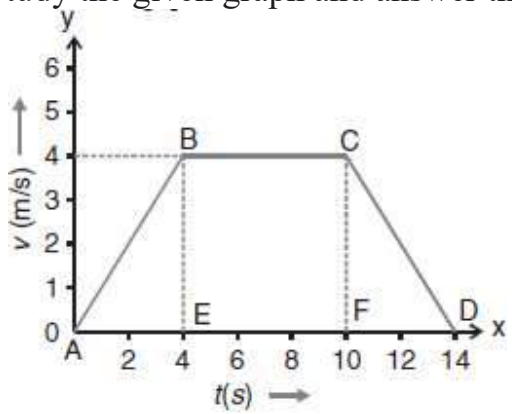
II. Answer the following questions. 2 x 1 = 2

4. If the time interval between lightning and thunder is 2 seconds, what is the distance of the point of lightning? (Speed of sound in air is 346 ms^{-1})?

5. What is the audible range of human ear ?

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

6. Study the given graph and answer the following questions.



(i) Which part of the graph shows accelerated motion ?

(ii) Which part of the graph shows retarded motion?

(iii) Calculate the distance travelled by the body in first 4 seconds of journey graphically ?

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. What are ultrasonic waves ? Name one animal which emits ultrasonic waves and explain how it uses the waves ? What is the role of ultrasonic waves in medical science ?

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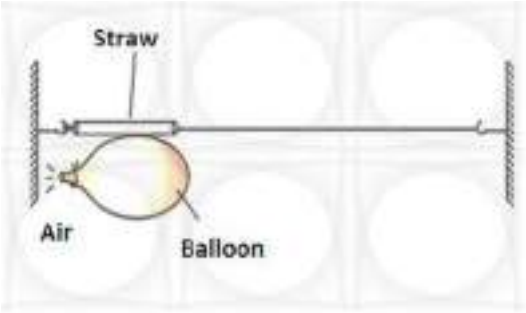
type of motion?

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 the following 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



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 an example for pure substance
    A.Milk B. Iron Nail C. Soil D. Water and Oil
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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between their particles : Oxygen, salt, milk.

17. When light is passed through a solution Tyndall effect is not observed. Why?

18. On the basis of the number of protons, neutrons and electrons in the samples given below identify **(i)** the cation **(ii)** the pair of isobars and **(iii)** the pair of isotopes.

Sample	Protons	Neutrons	Electrons
A	17	18	16
B	18	19	18
C	17	20	17
D	17	17	17

19. Define Mole concept?

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 apparatus used in the separation of two immiscible liquids?

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. Strange organelle of the cell

A. Vacuole B. Mitochondria C. Lysosome C. Plastids

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28. An example for bacterial disease

A. Jaundice B. AIDS C. Malaria D.Anthrax

29. An example for micronutrient is

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

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

30. Jaundice is good example for organ specific and tissue specific manifestations.

31. What is crop rotation? Give one example.

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

32. Draw the diagram of plant cell and label the following parts.

a) Cell wall b)Chloroplast

33. a) Give one difference between monocots and dicots

b) List any two features of chordates

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. Amphibians 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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