

PRE-BOARD EXAMINATION-1 (DECEMBER– 2019)

CLASS: IX

SCIENCE

Time: 3 hours

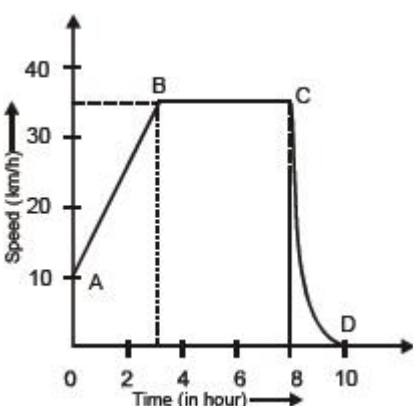
MAX. MARKS: 80

General Instructions:

- (i) The question paper comprises three sections-A, B, and C. Attempt all the sections.
- (ii) All questions are compulsory.
- (iii) All questions in Section A are one-mark questions comprising of Multiple-choice questions (MCQ), very short answer (VSA) type and assertion-reason type questions. They are to be answered in one word or in one sentence.
- (iv) All questions in section B are three-mark, short-answer type questions. These are to be answered in about 50-60 words each.
- (v) All questions in Section C are five mark, long-answer type questions. These are to be answered in about 80-90 words each.
- (vi) This question paper consists of a total of 30 questions.

SECTION A

1. The graph given below shows how the speed of a car changes with time.



- (i) What is the initial speed of the car? (1)
- (ii) What is the maximum speed attained by the car? (1)
- (iii) Which part of the graph shows zero acceleration? (1)
- (iv) Which part of the graph shows varying retardation? (1)

2. On what factor does the pitch of a sound depend? (1)
3. State the SI unit of power? (1)
4. Body A is heavier has body B, Which one has more inertia? (1)

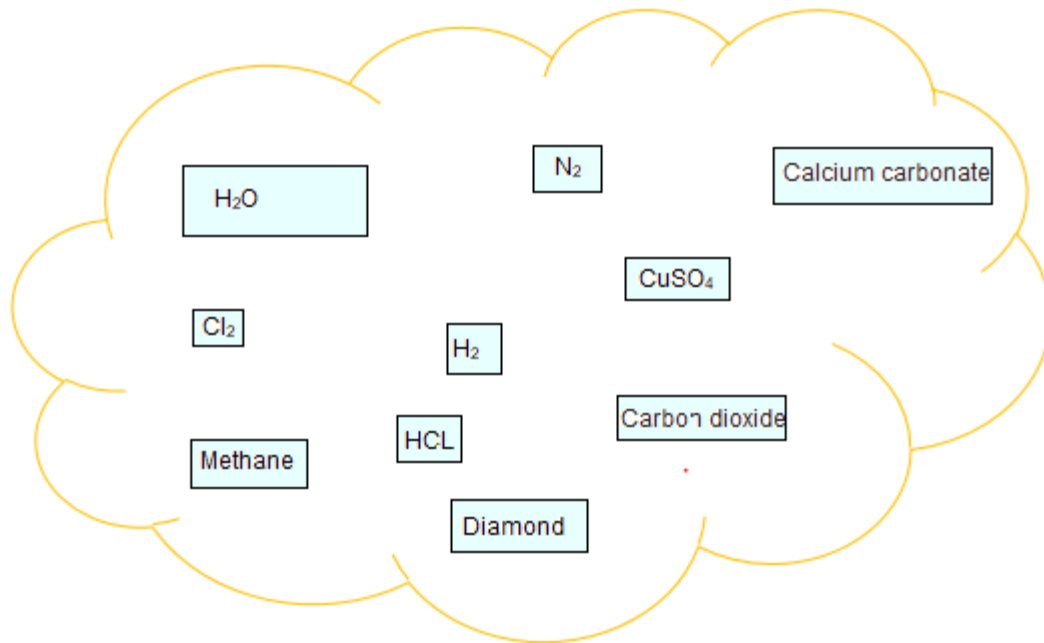
5. Draw a diagram to represent sound of ; (1)
(i) high pitch
(ii) Low pitch of the same loudness.
6. State Archimedes principle. (1)
7. Which of the following statements is not true about an atom? (1)
(a) Atoms are the building blocks from which molecules and ions are formed.
(b) Atoms cannot exist independently.
(c) Atoms are neutral in nature.
(d) Atoms combine together to form matter that we can see, feel, or touch.
8. Why there is no rise in temperature of a substance during the change of state although it is being heated continuously? (1)
9. Assertion – Sublimation of iodine is a physical change. (1)
Reason – No new substance is formed when solid iodine sublimes.
a) If A and R are true and R is the correct explanation of A.
b) If A and R are true but R is not correct explanation of A.
c) If A is true, R is false.
d) If A is false, R is true.
10. Give one word for the following:- (1)
a) Positively charged ion. b) A group of atoms carrying a charge.
11. The boiling point of ethane is 88°C . This temperature will be equivalent to (1)
a) 285K. b) 288K. c) 185K. d) 361K.
12. What is the maximum number of electrons that can be accommodated in the K-shell and L-shell of an atom? (1)
13. Who introduced the system of binomial nomenclature of organisms? (1)
A. Robert Whitaker
B. Carolus Linnaeus
C. Robert Hooke
D. Ernst Haeckel
14. Cells specializing in one function called **W** are often grouped together at a definite place in the body. An example of **W** that forms the framework that supports the body is called **X**. **X** also anchors muscles and supports the main organs of the body. **X** can be connected to each other by **Y**, another group of specialized cells. **Y** is very elastic and has considerable strength. Another group of cells **Z** connects muscles to **X**. (4)

What are denoted by **W**, **X**, **Y**, and **Z**

SECTION-B

15. (a) Name the type of energy possessed by a moving object. Write its SI unit (3)
(b) Derive the expression for this energy for an object moving with velocity v and having mass m .
16. Explain the working and application of SONAR. (3)

17. An iron sphere of mass 1kg is dropped from a height of 10m. If the acceleration acquired by the sphere is 9.8 m/s^2 . Find the momentum transferred by the sphere to the ground? (3)
18. a) Classify the substances given in below figure into elements and compounds (3)



19. Write in brief an activity to show the particulate nature of matter. What are the characteristics of the particles of matter? (3)
20. a) Define atomic number and mass number. (3)
- b) The atomic number of lithium is 3. Its mass number is 7.
- How many protons and neutrons are present in lithium atom?
 - Draw the diagram of a lithium atom.
21. a) Differentiate between Rough Endoplasmic Reticulum and Smooth Endoplasmic Reticulum in terms of structure and function. (3)
- b) How is endoplasmic reticulum important for membrane biogenesis?
22. a) Explain the structure and function of three different types of simple permanent tissues. (3)
- b) Draw neat and well-labelled diagrams of longitudinal sections of three types of simple permanent tissues.
23. What is composite fish culture? What are its advantages? (3)
24. What is immunization? What are the principles of prevention of diseases? (3)

SECTION-C

25. (a) State Newton's second law of motion, (5)
- (b) Express it mathematically and find SI unit of force from it.

26. (a) State universal law of gravitation. (5)
- (b) What happens to the force between two objects, if
- I. The mass of one object is doubled.
 - II. The distance between the objects is doubled.
 - III. The masses of both objects are doubled? Justify your answer.
27. (a) Name the separation technique you would follow to separate (5)
- (i) Dyes from black ink.
 - (ii) A mixture of salt and ammonium chloride
 - (iii) Cream from milk.
 - (iv) Sodium chloride from its solution in water.
- (b) State the principle used in separating a mixture of two immiscible liquids. Describe an activity with diagram to separate a mixture of two immiscible liquids.
28. a) Calculate the formula unit masses of ZnO , Na_2O , K_2CO_3 and KNO_3 (5)
[Given atomic masses of $\text{Zn} = 65 \text{ u}$, $\text{Na} = 23 \text{ u}$, $\text{K} = 39 \text{ u}$, $\text{C} = 12 \text{ u}$, $\text{N} = 14 \text{ u}$ and $\text{O} = 16 \text{ u}$]
- b) Write the chemical formulae of the following.
- (i) Magnesium chloride
 - (ii) Calcium oxide
 - (iii) Aluminum sulphate.
 - (iv) Magnesium hydroxide.
- c) Define one mole.
29. a) What are biogeochemical cycles? (5)
- b) Draw a flow diagram to show carbon cycle.
- c) List three human activities which could lead to an increase in the carbon dioxide content in the air.
30. a) What are the major divisions of kingdom plantae? (5)
- b) What is the basis for this classification?
- c) Differentiate between plants that produce naked seeds and plants that produce seeds enclosed in fruits.