

**JB Academy, Ayodhya**  
**Annual Examination 2024-25**  
**Class – IX, Sub: Science (086)**

**Max. Marks: 80**

**Time Allowed: 3 hours**

**General Instructions:**

- i. This question paper consists of 39 questions in 5 sections.
- ii. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
- iii. **Section A** consists of **20 objective type questions** carrying 1 mark each.
- iv. **Section B** consists of **6 Very Short questions** carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
- v. **Section C** consists of **7 Short Answer type questions** carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words
- vi. **Section D** consists of **3 Long Answer type questions** carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
- vii. **Section E** consists of **3 source-based/case-based units** of assessment of 04 marks each with sub-parts.

**Section -A**

1. Which of the following element has the same molecular mass and Atomic mass-  
a) Nitrogen                      b) Neon                      c) Oxygen                      d) Chlorine
2. Who discovered Proton?  
a) J.J Thomson                      b) H. Lawrenz                      c) E. Goldstein                      d) J. Chadwick
3. The fifth orbit in an atom is designated as -  
a) K- Shell                      b) L- Shell                      c) N- Shell                      d) O- Shell
4. A liquid is able to scatter a beam of light but it leaves no residue after passing through a filter Paper. The paper can be a mixture of –  
a) Dettol and water mixture                      b) Salt and water mixture  
c) Sand and water mixture                      d) Sugar and water mixture
5. Which of the following is not a property of Sulphur –  
a) Poor conductor of heat                      b) It's colourful  
c) Poor conductor of Electricity                      d) it's Lusturous
6.  $^{222}\text{Rn}_{86}$  is an Isotope of noble gas Radon. How many Protons, Neutrons and Electrons Respectively are there in one atom of this isotope of Radon –  
a) 86,36,132                      b) 86, 90,128                      c) 86,76 ,152                      d)86,86,136
7. Which condition out of the following will increase Evaporation of water  
a) Increase in the temperature                      b) Decrease in temperature  
c) Less exposed Surface area                      d) Adding common salt in the water
8. A cell swells up if  
a) Kept in hypotonic solution                      b) Kept in hypertonic solution  
c) Kept in isotonic solution                      d) All of the above.
9. A nail is inserted in the trunk at a height of 4 m from the ground level. After 3 years, the nail will  
a) Move downward                      b) Move upward  
c) Remain at the same position                      d) Move sideways





### Section - D

34. (i) Summarise the rules for writing of distribution of electrons in various shells for the first 18 elements (any two). Who gave this rule?  
(ii) The percentage abundance of the Isotope Ne -20 is 90% and Ne- 22 is 10%. Calculate the Average atomic mass of Neon

**OR**

34. (i) Answer the following questions –  
(a) Name a Non-metal with 6 valence electrons  
(b) Which fundamental particle is not found in Hydrogen  
(c) Which of the two atomic mass or mass no. is always a whole no.  
(d) Who proposed the plum pudding model of the atom  
(e) Which Noble gas has electronic configuration same as  $\text{Na}^+$

(ii) 0.44 g of a Hydrocarbon on complete combustion with oxygen gave 0.88g of Carbon di oxide and 1.8g of water.

Show that these data are in agreement with which law?

State the law and Who gave this law?

35. Give reasons for the following

- Meristematic tissues do not have vacuoles.
- We have a crunchy feeling while eating pear.
- Food grains must be dried properly before storage in silos.
- Branches of trees move and bend freely without breaking even in high wind velocity.
- Cardiac muscles are similar to both striated and unstriated muscles.

36. (a) Define power. Give the SI unit of power.

(b) A boy weighing 40 kg carries a box weighing 20 kg to the top of a building 15 m high in 25 seconds. Calculate the power. ( $g = 10 \text{ m/s}^2$ )

**OR**

(a) Define buoyant force. Name two factors on which buoyant force depends.

(b) What is the cause of buoyant force?

(c) When a boat is partially immersed in water, it displaces 600 kg of water. How much is the buoyant force acting on the boat in newtons? ( $g = 10 \text{ m s}^{-2}$ )

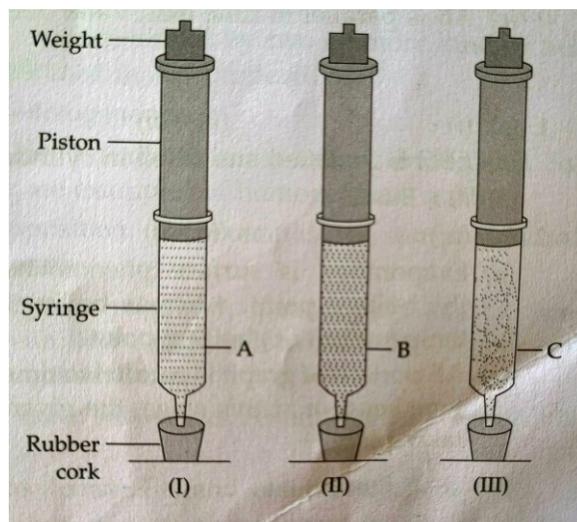
### Section - E

37. Based on the force of attraction between the constituent particles, the matter can be divided into three forms- solid, liquid and gas. As per their particle structure, the three forms of matter exhibit properties that are very different from each other.

Consider the activity given below that illustrates the difference in the properties of the three states of matter. It is observed that

- The piston of the first syringe, which contains 'A' does not move.
- The piston of the second syringe, which contains 'B' moves in slightly.
- The piston of the third syringe, which contains 'C' moves considerably.

On the basis of the above case and the related studied concepts, answer the following questions:



(a) Identify the type of matter present in piston A, B and C.

(i) A-solid; B-liquid; C-gas

(ii) A-gas; B-liquid; C-solid

(iii) A-solid; B-gas; C-liquid

(iv) A-liquid; B-solid; C-gas

(b) What will be observed if honey is taken in the syringe?

(i) The piston will move as that of syringe A.

(ii) The piston will move as that of syringe C.

(iii) The piston will move as that of syringe B.

(iv) The piston will not move at all.

(c) Which of these matters will show the highest diffusion?

(i) A

(ii) B

(iii) C

(iv) All of these will show equal diffusion

(d) Write one real life application of your observation for piston C.

(e) Arrange the matter in syringes A, B and C in order of their increasing densities.

38. Read the passage and answer the questions.

There are two ways of obtaining fish for our food. One is capture fishing and other is culture fishing. Fishery is further divided into inland fishery and marine fishery. In inland fishery, fishing is done in freshwater resources like stream river ponds, brackish waters like lagoons. Marine fishery consists of fishing in marine water like sea water along the coastlines deep sea and beyond. Some marine fishes are millets, prawns, bhetki, oysters etc.

Read the above passage and answer the questions based on it

1. Differentiate between culture and capture fishery.

2. Mention names of two marine fishes of high economic value.

3. How does Catla differ from Mrigal?

4. Write names of two exotic species of fishes.

39. Sound is produced by vibrating objects. The matter or substance through which sound is transmitted is called a medium. It can be solid, liquid or gas. Sound moves through a medium from the point of generation to the listener. When an object vibrates, it sets the particles of the medium around it vibrating. The particles do not travel all the way from the vibrating object to the ear. Sound waves are characterized by the motion of particles in the medium and are called mechanical waves. When a vibrating object moves forward, it pushes and compresses the air in front of it creating a region of high pressure; this region is called a compression(C).When the vibrating object moves backwards, it creates a region of low pressure called rarefaction (R). Hence sound is longitudinal wave.

**(i) Sound waves are**

(a) Mechanical waves

(b) Electromagnetic wave

(c) Transverse waves

(d) None of these

**(ii) Sound travel in medium with**

(a) Compression and rare fraction

(b) Crest and trough

(c) Both can be possible

(d) None of these

**(iii) Compression is the region of**

(a) High pressure

(b) Low pressure

(c) Medium pressure

(d) None of these

**(iv) What is sound and how is it produced?**

**(v) Why is sound wave called as longitudinal wave?**