



## **Class 9 Science Sample Question Paper 2017-18**

**Time allowed: 03 Hours**

**Science Class – IX**

**Maximum Marks: 80**

Instruction:

- (i) Question numbers 1 and 2 in Section-A are one mark question. They are to be answered in one word or in one sentence.
- (ii) Question numbers 3 to 5 in Section- A are two marks questions. These are to be answered in 30 words each.
- (iii) Question numbers 6 to 15 in Section-A are three marks questions. These are to be answered in about 50 words each.
- (iv) Question numbers 16 to 21 in Section-A are 5 marks questions. These are to be answered in 70 words each.
- (v) Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question. These are to be answered in brief
- (vi) There is an internal choice in two questions of three marks each and one question of five marks.

### **Section-A**

#### **Question numbers 1 and 2 in Section-A are one mark question**

1. While playing football the goalkeeper didn't get sufficient time to stop a fast ball shot towards him. Why did he hurt his hand while doing so ?
2. Mention the physical quantity shown by the slope of a speed 2 time graph.

Question numbers 3 to 5 in Section- A are two marks questions

3. How is striated squamous epithelial tissue different from squamous epithelial tissue ?
4. (a) State Universal law of Gravitation. (b) Using the formula for „G“, find its SI unit.
5. What causes Japanese encephalitis? How it can be prevented?

#### **Question numbers 6 to 15 in Section-A are three marks questions**

6. (a) Define matter and write its three states. (b) Explain how these states of matter arise due to variation in the characteristics of the particles.
7. (a) Write any two differences between a chemical change and a physical change. (b) State one instance in which water undergoes a physical change and one in which it undergoes a chemical change.
8. What is meant by osmosis? What will happen to the living cell if it is kept in a hypertonic solution? Give an example of endo osmosis.

OR,

- (a) Draw a neat and labelled diagram of collenchyma tissue. (b) Do the cells of this tissue have intercellular spaces ? Why or why not ?
10. A gun of mass 3 kg fires a bullet of mass 30 g. The bullet takes 0.003 s to move through the barrel of the gun and acquires a velocity of 100 m/s. Calculate : (i) The velocity with which the gun recoils (ii) The force exerted on gunman due to recoil of the gun.



11. Rameshwar took the responsibility of his fields when his father got old. His father advised him to use farmyard manure over fertilizers but he wanted to use chemical fertilizers. His father told him about the adverse effects of chemical fertilizers to the nearby water bodies.

Rameshwar's father encouraged him and his friends also to use organic manure and careful and judicious use of chemical fertilizers.

- (i) Why the chemical fertilizers must be used carefully and judiciously ?
- (ii) Manures are natural fertilizers. How can they be prepared in the field ?
- (iii) Why did Rameshwar's father advise him ?

12. Calcium carbonate decomposes on heating to form calcium oxide and carbon dioxide. When 10g of calcium carbonate is decomposed completely then 5.6g of calcium oxide is formed ? Calculate the mass of carbon dioxide formed. Which law of chemical combination will you use in solving this problem ? State the law.

13. Give three differences between Monocot and Dicot Plant.

14. Q. (a) Write the no. of valence electrons in (a) (i) Na atom and  $\text{Na}^+$  ion (ii) O atom and  $\text{O}^{2-}$  ion

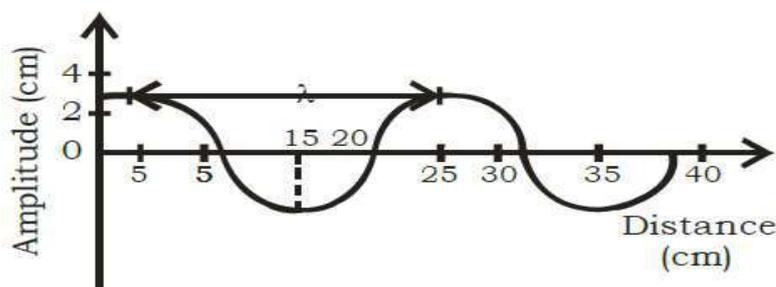
(b) An element "E" loses  $2e^-$  to form  $\text{E}^{+2}$  ion. What will be the chemical formula of the compound formed between E and oxygen

15. The following figure shows a waves of frequency 50 Hz

Find: (a) The amplitude

(b) The wavelength

(c) The velocity of the wave.



**Question numbers 16 to 21 in Section- A are 5 marks questions**

16. (a) Define evaporation and explain the role of speed of wind at the rate of evaporation. (b) Why do we feel cool when we sit under fan during summer ?

17. (a) Define tissue. What is the importance of tissues in multicellular organisms ? (b) Are plants and animals made of same types of tissues ? If no, then. Write three points of difference.

18. (i) Define relative density. Give its mathematical formula.

(ii) Define density. Give its SI unit.

(iii) A solid weighs 80 g in air, 64 g in water. Calculate the relative density of solid.

(iv) When kept in water, state if the object would float or sink ?

19. Explain the following phenomena on the basis of Newton's Laws of Motion : (i) Falling of buildings during an earthquake. (ii) Shattering of car windows due to a bomb blast. (iii) Cell phone breaks into pieces on falling from a table.

OR, (a) For a moving object, derive graphically relation between final velocity  $v$ , initial velocity  $u$ , acceleration "a" and time "t".

(b) Draw the distance-time graph for the following situations:

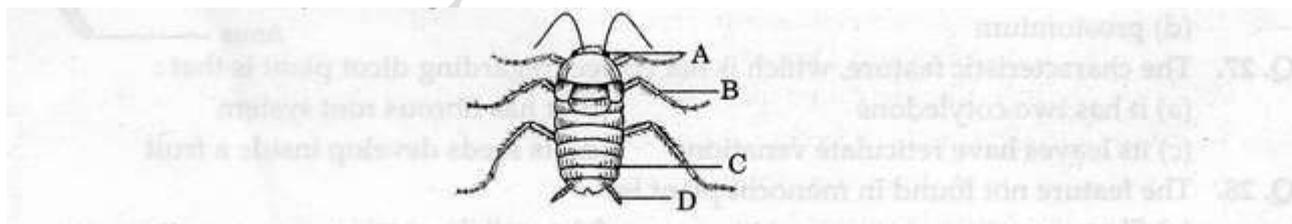


- (i) When a body is stationary  
(ii) When a body is moving with a uniform speed.  
(iii) When a body is moving with non-uniform speed.
20. (a) From Rutherford's  $\alpha$ -particle scattering experiment, give the experimental evidence for deriving the conclusion that :
- (i) most of the space inside the atom is empty. (ii) the nucleus of an atom is positively charged.
- (b) An element has mass number 32 and atomic number 16, find:
- (i) the number of neutrons in the atom of the element and  
(ii) the number of electrons in the outermost shell of the atom.
21. Explain the following statements:
- (a) Being disease free, is not the same as being healthy. (b) Community health is essential for good individual health. (c) Villagers suffer with cholera more than urban people.
- OR, "On exposure with an infectious microbe does not necessarily mean developing noticeable disease". Do you agree? Explain with reason. If yes, how severe infections occur in our body?

### Section-B

**Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question**

22. How do we test the stability of a solution ? List two solutions which exhibit this property.
23. Nisha determined the boiling point of water and thought of doing another experiment. She took aqueous solution of salt and repeated the experiment. Would there be any change in boiling point? Why?
24. Label A,B,C and D in given diagram:



25. When an object is kept on a liquid, then two forces act on it. Name the two forces and their directions.
26. In the experiment of "observing and comparing pressure exerted by iron cuboid on sand bed", what is the conclusion drawn from the experiment? Does it match with the theoretical aspect?
27. After observing an earthworm carefully, Samir decided to place it in phylum Annelida. Which two features did he observe that helped him do so.

