

Class9 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. State the chemical nature of the thickening of the walls of sclerenchyma tissue.
2. Distinguish between intervarietal and interspecific hybridisation of crop plants

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

3. How is heating of sugar and heating of ammonium chloride different from each other ? Explain your answer.
4. Name and define the mechanism responsible for release of water on adding salt to the vegetables.
5. An observer standing at a seacoast observes 60 waves reaching the coast per minute. If the wavelength of a wave is 10 m., find the velocity of the wave.

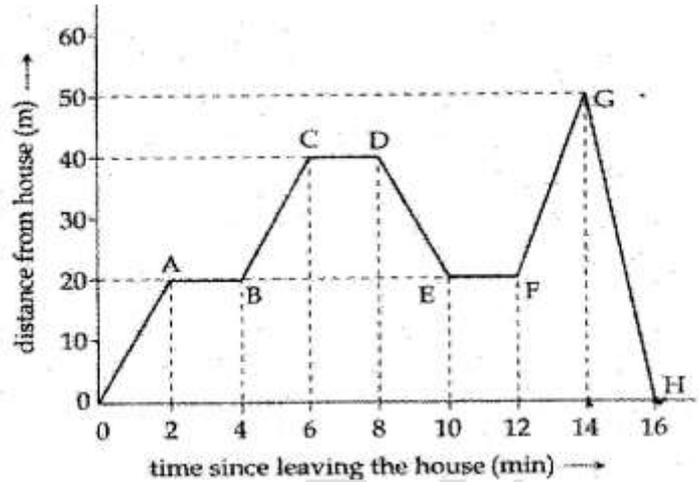
Question numbers 6 to 15 in Section-A are three marks questions

6. Rahul was a good player, but his sports teacher observed that he takes drugs. Rahul denied this. Then the sports teacher asked him to go for blood test. Answer the following questions. (a) Name the technique that can be used to detect the presence of drugs in blood. (b) Write any other application of this technique. (c) Which values in Rahul's personality are reflected in his behaviour? How will these values affect his reputation and future prospectus in sports and as an individual?
7. Identify the type of tissues in the following:-
(a) Eye-lid (b) Inner lining of the intestine (c) Lining of the kidney tubule
8. Answer these questions:

- (a) Why is the cell called the structural and functional unit of life?
- (b) Why is the plasma membrane called a selective permeable membrane?
- (c) Name the factor which decides the movement of water across the plasma membrane.
9. A black and a red suitcase were tied to the car roof. It takes 5 ropes to keep a black suitcase from falling down a car while turning and only two ropes to keep the red suitcase from falling down. What do you conclude about the relative weight of the two suitcases? Justify your answer on the basis of Newton's Law of motion. Also state the Law.
10. "Excessive use of chemicals such as insecticides and pesticides causes a threat to Ecology". Explain with reason.
- OR,
- (a) Mention two points of difference between compost and vermi compost. (b) State the meaning of green manure.
11. (i) The value of 'G' on the surface of earth is $6.67 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$. What will be its value on the surface of moon?
- (ii) A stone is allowed to fall from the top of a tower 100m high and at the same time another stone is projected vertically upwards from the ground with a velocity of 2.5 m/s. Calculate when and where the two stones will meet ($g = 10 \text{ m/s}^2$)
12. (a) How many neutrons are present in C-14 isotope of Carbon ?
- (b) How many protons do He^{+2} ions possess?
- (c) How many electrons can be filled in the third orbit of an atom at a maximum?
13. In a water tank, on throwing a stone 20 full ripples are produced in 1 sec. The distance between a crest and trough is 10 cm. calculate (a) the wavelength of ripple (b) frequency of ripple (c) velocity of the ripples.
14. A man whose mass is 50 kg moves up 15 steps each of height 15 cm in 45 seconds of time. Calculate the power used in climbing those stairs. ($g = 10 \text{ m/s}^2$)
15. Describe the postulates of Neils Bohr's model of an atom. Write the various rules formulated for the distribution of electrons to the various shells. What is the name given to this arrangement?
- Question numbers 16 to 21 in Section- A are 5 marks questions**
16. (a) List three characteristics of particles of matter. When we add some sugar or salt in a beaker containing water, after sometime the sugar or salt becomes invisible. Where does it go? What property of particle of matter does it show?
- (b) How will you justify that ice water and steam are the three states of a substance and not different substances?
17. (a) List six factors for which the variety improvement of crops is aimed at ? (b) Explain two advantages of mixed cropping.

18. The following graph describes the motion a girl going to meet her friend who stays 50 m from her house.

- (a) How much time she takes to reach her friend's house?
- (b) What is the distance travelled by the girl during the time interval 0 to 12 min?
- (c) During which time interval she is moving towards her house?
- (d) For how many minutes she was at rest, during the entire journey?
- (e) Calculate the speed by which she returned home.



OR,

(a) Draw a velocity-time graph for an object in uniform motion. Show that the slope of the velocity-time graph gives the acceleration of the object.

(b) An aeroplane starts from rest with an acceleration of 3 m/s^2 and takes a run for 35 s before taking off. What is the minimum length of the runway and with what velocity the plane took off?

19. (i) Who introduced the system of scientific naming of organisms? What are the conventions followed while writing scientific names?

(ii) Name the phylum to which the following organisms belong:

- (a) Ascaris (b) Leech (c) Sea urchin (d) Liver fluke (e) Sycon

20. (i) Define 1 watt of power. (ii) Express 1 kilowatt in terms of joule per second.

(iii) Five bulbs each rated 100W are used for 4 hours, a heater rated 1500W is used for 2 hours and an electric iron rated 1000 W is used for 5 hours. Calculate the total energy consumed by them in terms of the commercial unit of energy. Convert the energy into Joules.

21. (i) Derive an expression for kinetic energy of an object of mass m moving with a uniform velocity v .

(ii) What happens to the kinetic energy of a body if its velocity is halved?

(iii) A force acting on a 10 kg mass changes its velocity from 54km/h to 90km/h. Calculate the work done by the force.

Section-B

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

22. State the method by which we can prepare colloid of starch.

23. While doing an experiment to determine the boiling point of water, a student heated water in a beaker and observed that when water starts boiling the temperature remains constant. State reason. Where does the heat energy go?

OR, In an experiment to determine the boiling point of water, mention two important precautions to be taken.

24. Classify the following elements as macro or micro nutrients in plants. (i) Nitrogen (ii) Zinc (iii) Copper (iv) Potassium

25. An object weighing 10 N in air, weighs 8 N in a liquid A and 9 N in liquid B. In which liquid the buoyant force experienced by the liquid is more and why?

26. While conducting the experiment to measure the weight of water displaced by the body precaution should be taken to immerse the solid in water without touching the walls or bottom of the container. Why ?

27. (a) How are bird modified to reduce weight for flying? (b) Which part of body is modified for flight?