

CBSE
Class IX Science
Sample Paper – 6

Time: 3 hrs.

Total Marks: 80

General Instructions:

- The question paper comprises five sections – A, B, C, D and E. You are to attempt all the sections.
- All questions are compulsory.
- Internal choice is given in sections B, C, D and E.
- Question numbers 1 and 2 in Section A are one mark questions. They are to be answered in one word or in one sentence.
- Question numbers 3 to 5 in Section B are two marks questions. These are to be answered in about 30 words each.
- Question numbers 6 to 15 in Section C are three marks questions. These are to be answered in about 50 words each.
- Question numbers 16 to 21 in Section D are five marks questions. These are to be answered in about 70 words each.
- Question numbers 22 to 27 in Section E are based on practical skills. Each question is a two marks question. These are to be answered in brief.

Section A

1. Name two processes involved in the formation of soil. (1)
2. List two initiatives taken to increase the availability of water for agriculture. (1)

Section B

3. List the properties of suspension and give examples. (2)

OR

Name the gas which is added during the purification of water. Why is it called a disinfectant?

4. Disha performed an experiment in which she kept the cells of onion peel and RBCs separately in a hypotonic solution. What would happen to both these types of cells? (2)
5. A weight of the box on the Earth is 200 N. What will be its mass on the Moon? (2)
($g = 10 \text{ m/s}^2$)

Section C

6. Answer the following: (3)
- Define velocity. Give the SI unit of velocity.
 - Define non-uniform acceleration.
 - Give the formula of average velocity.
7. Identify the organism. Name the phylum to which this organism belongs. Write any two characteristic features of this phylum. (3)



8. (3)
- In which direction of the bus will passengers move when the bus starts suddenly from its rest position? Give explanation.
 - A boy is riding a cycle on a circular track. Is he exhibiting accelerated motion? Give reason for your answer.
9. How many moles of Cr are present in 85 g of Cr_2S_3 ? (3)
(Cr = 52, S = 32)
- OR**
- Calculate the formula unit mass of CaCO_3 .
(Given, Ca = 40 u, C = 12 u and O = 16 u)
 - Calculate the mass of 10 moles of carbon dioxide.
 - How many atoms are present in 100 a.m.u. of helium if the atomic mass of helium is 4 a.m.u.?
10. Rahul observed that his friend Anil was behaving differently for the past one week. He used to get tired easily and sat on the bench after playing for 5–10 minutes. His eyes were yellow pale and he complained of nausea and vomiting. Rahul advised him to visit the doctor. (3)
- Symptoms of which disease are reflected in Anil's situation?
 - Which causative organism is responsible for the disease?
 - Which values are depicted by Rahul?

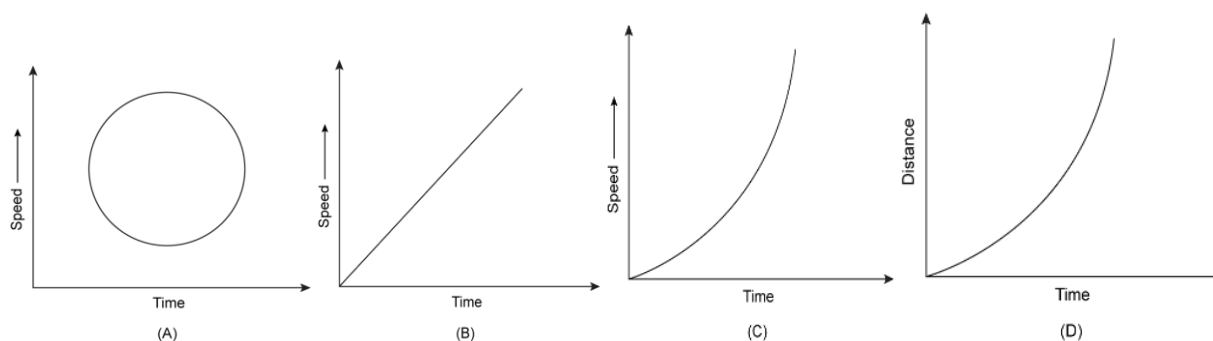
11. A bullet of mass 15 g is fired from a gun of mass 5 kg with a velocity of 500 m/s. Calculate the recoil velocity of the gun. Also explain what you mean by recoil velocity. (3)

OR

Which graph represents the following cases?

- (a) Driving a car on a crowded street
- (b) Ball dropped from the top of a building
- (c) Incorrect graphical representation

Give reason for each case.



12. Farmers use pesticides to control weeds and insects. Chemicals which are used to eliminate weeds and insects have harmful effects on the environment. (3)
- (a) What are the harmful effects of pesticides on the environment?
 - (b) Should farmers use pesticides to protect their crops from weeds and insects? Suggest an alternative to pesticides.

OR

State the management practices followed in a livestock firm to ensure healthy and productive livestock population. (3)

13. Give reason: (3)
- (i) A large part of the atom is neglected when calculating the mass of the atom.
 - (ii) Atoms combine with each other.
14. How will you differentiate between squamous, cuboidal and columnar epithelia under the microscope, if slides of each of these are individually prepared? (3)
15. 'We can easily move our hand in the air but not through any solid material'. Justify the statement. (3)

Section D

16. (5)

- (a) Define kinetic energy. Give its formula.
- (b) What is potential energy? Give its formula.
- (c) State which energy the following cases represent:
 - (i) A book kept on a table
 - (ii) A ball rolling down the hill
 - (iii) A ball which has reached the bottom of a hill
 - (iv) A stone released through a stretched string

OR

- a) Two bodies of equal masses move with uniform velocities v and $4v$, respectively. Find the ratio of their kinetic energies.
- b) Write an expression for work done in raising a load of mass ' m ' at height ' h '.

17. Answer the following: (5)

- (a) Why is solid carbon dioxide called dry ice? Give its uses.
- (b) Why is dry ice more effective for cooling purposes than ordinary ice?
- (c) Why is dry ice stored under high pressure?

18. (5)

- (a) Draw a neat and labelled diagram of the nitrogen cycle in nature.
- (b) Describe in brief the role of nitrogen-fixing bacteria and lightning in atmospheric nitrogen fixation.

OR

- (c) Draw a neat and labelled diagram of the carbon cycle in nature.
- (d) What is the greenhouse effect? How does carbon dioxide cause global warming in the atmosphere?

19. Briefly describe how to separate a mixture of (5)

- (a) Fine mud particles suspended in water
- (b) Tea leaves and tea
- (c) Butter and curd
- (d) Camphor and salt
- (e) Common salt and water

OR

- (a) What is the basic difference between a physical and chemical change?
Classify the following into a physical or chemical change:
 - Freezing of water
 - Mixing of iron filings and sand
 - Fading of clothes
 - Spoiling of food

(b) Explain how during the burning of a candle, both physical and chemical changes take place.

20. (5)

(a) A weed is growing among the hedges which border your school playground. How will you identify whether it is a monocot or a dicot?

(b) Why is the coelom absent in diploblastic organisms?

21. (5)

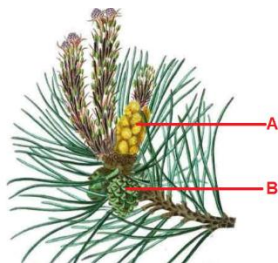
(a) A football and a tennis ball are dropped from a certain height. Which ball will reach the ground faster? Give reason for your answer.

(b) An iron nail sinks, but a ship made of iron and steel does not. Why?

(c) Bricks of different volumes are dropped in water. What will be experienced by the two bricks? What amount of water will be displaced by the bricks?

Section E

22. Observe the figure carefully. (2)



(a) Which structures are marked A and B in the given figure?

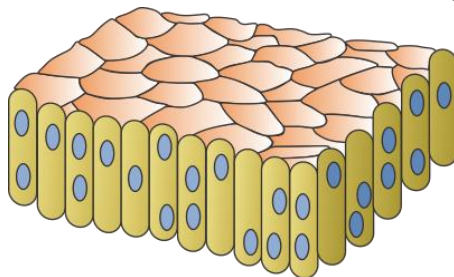
(b) What is the distinguishing feature of this group of plants?

OR

(a) Dinesh observed the specimen of an earthworm in the school laboratory and noted its features. What is the first segment of the body of an earthworm called?

(b) To which phylum does earthworm belong?

23. The given figure represents a tissue found in the human body. (2)



(a) Identify the tissue and state its function.

(b) Mention any two locations where this tissue is found in the body.

24. On which principle is the working of a stethoscope based? State a one-word term for the text 'hall giving many echoes when sound is incident on its ceiling or wall'. (2)

25. There are two nails A and B. Nail A is sharp and nail B is blunt. The area of nail A is 0.1 m^2 and that of nail B is 1.5 m^2 . These nails are to be hammered into a wooden plank. Which nail will be hammered more easily if the force applied is 200 N to hammer both nails? Explain why. Calculate the pressure required to hammer each nail. (2)

OR

Why is the weight of the object more at the poles than at the equator? [2]

26. 10 g of solution P was added to solution of Q taken in a beaker. The mass of product formed is 25 g. What is the mass of solution Q? Justify.

27. You are given a mixture of mercury, oil and water. How will you separate this mixture? Suggest a method to separate them. (2)

OR

During the distillation of a salt water mixture, what remains behind in the distillation flask after completion of the distillation process and why?