

**CLASS IX (2019-20)**  
**SCIENCE (CODE 086)**  
**SAMPLE PAPER-3**

**Time : 3 Hours**

**Maximum Marks : 80**

**General Instructions :**

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

- Q1. What is the ultimate source of energy in an ecosystem? [1]
- Q2. Which of the following method is used to separate a mixture of salt and camphor? [1]
- (a) Distillation (b) Filtration  
(c) Sublimation (d) Centrifugation
- Q3. Which of the following organisms has tube feet as its locomotory organs? [1]
- (a) Starfish (b) Jellyfish  
(c) Cuttlefish (d) Silver fish

**OR**

Pteridophyta do not have :

- (a) Root (b) Stem  
(c) Flowers (d) Leaves
- Q4. Why can't solids be compressed? [1]
- (a) The movement of the constituent particles are not restricted.  
(b) The inter particle attractive forces are very weak.  
(c) The constituent particles are closely packed.  
(d) None of the above.
- Q5. The valency of silicon is [1]
- (a) 2 (b) 4  
(c) 6 (d) 8

**OR**

The isotope deuterium of hydrogen has :

- (a) No neutrons and one proton  
(b) One neutrons and two protons  
(c) One electron and two neutron  
(d) One proton and one neutron
- Q6. Cell wall is mainly composed of [1]
- (a) Glucose (b) Fructose  
(c) Sucrose (d) Cellulose

- Q7. Which is not true with respect to cathode rays ? [1]  
(a) A stream of electrons.  
(b) Charged particles  
(c) Move with same speed as that of light.  
(d) Can be deflected by magnetic field
- Q8. Rohu and Catla are types of : [1]  
(a) Marine water fish (b) Freshwater fish  
(c) Both A and B (d) None of these
- Q9. Barometer is an instrument that is used to measure : [1]  
(a) Velocity (b) Gaseous pressure  
(c) Atmospheric Pressure (d) Temperature

**OR**

Air shows the property of :

- (a)  $N_2$  (b)  $O_2$   
(c) Both (a) and (b) (d) None of these

**DIRECTION :** For question numbers 10 and 11, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below

- (a) Both A and R are true and R is correct explanation of the A.  
(b) Both A and R are true but R is not the correct explanation of the A.  
(c) A is true but R is false.  
(d) Both A and R are false.
- Q10. **Assertion (A) :** The value of acceleration due to gravity of earth does not depend upon mass of the body.  
**Reason (R) :** Acceleration due to gravity is a constant quantity. [1]
- Q11. **Assertion (A) :** The smell of incense can be felt in another room.  
**Reason (R) :** With the increase in temperature of particles, their kinetic energy also increases. [1]
- Q12. Write the molecular formula for following compounds: [1]  
(a) Hydrogen sulphide (b) Calcium hydroxide
- Q13. Answer question numbers 13.1–13.4 on the basis of your understanding of the following paragraph and the related studied concepts.  
Sneha visited Egypt with her parents where she went on a tour of the Sahara desert. She didn't know that plants can grow also in the desert. She went and tore a leaf from one plant but they were very thick. When she was finally able to tear one small part, she found that the inside of the leaf was fresh and watery.



- 13.1 Why are the leaves of plants that grow in desert thick ? [1]  
13.2 Sneha sees that there is a waxy coating on the epidermis of the leaf. What is the name of this coating and what is its function ? [1]

**13.3** Define transpiration. [1]

**13.4** Should Sneha be careful while touching a plant that grows in the deserts ? [1]

Q14. Questions 14.1 to 14.4 are based on the Table A. Study this table and answer the following questions :

**Table A**

Distance (m)	Height above the base of the mountain (m)	Uniform speed (m/s)
0-500	100	2
500-2000	250	3
2000-4000	450	1.5
4000-5000	500	0.5

Alok is travelling to Vaishnodevi on foot. He starts from the base of the mountain and the temple is at a distance of 5 km from the base and at a vertical height of 500 m. He also notes his uniform speed, distance and height from the base at regular intervals (shown in table). Alok weighs 50 kg.

**14.1** Find the kinetic energy in the 500-2000 interval. [1]

**14.2** Find his potential energy at the end of 2000-4000 interval. [1]

**14.3** How much work has Alok done against the gravity when he reaches the summit? [1]

**14.4** State the law of conservation of energy. [1]

## SECTION -B

Q15. (a) Why does a passenger jumping out of a rapidly moving bus fall forward with his face downwards ?  
(b) Why is it difficult for a fireman to hose, which ejects large amount of water at a high velocity ? [3]

Q16. Define isotopes and isobars and also give examples. [3]

Q17. Classify the kind of manures based on the kind of biological material used. [3]

Q18. A mass of 10 kg is at a point A on the table. It is moved to a point B. If the line joining A and B is horizontal, what is the work done on the object by the gravitational force? Explain your answer. [3]

### OR

Ashish had a pain in his ear as he pricked it with a pin. He then goes to the doctor; the doctor advised we should take proper care of our ears and protect them from damage. Read the above passage and answer the following questions :

(a) Why we must not prick with hard and pointed things inside our ears ?

(b) What values you have learnt from the given passage ?

Q19. Define : [3]

(a) Bilateral symmetry,

(b) Coelom, and

(c) Triptoblastic.

Q20. (a) Birds and mammals share one common feature. Give details.  
(b) Name the phylum in which animals has soft bodies covered with a hard shell.  
(c) Ingestion of solid food occurs in which type of nutrition ? [3]

### OR

(a) Which structure is found in plant cells but absent in animal cell ?

(b) What is the functional segment of DNA ?

(c) Name the pigment that imparts red and yellow colour to flowers.

Q21. What are the differences between the mass of an object and its weight ? [3]

Q22. (a) What is the combining capacity of an element called ?  
(b) How many moles does 24 g of Mg contain ?  
(c) What is the difference between sodium atom and sodium ion ? [3]

### OR

Convert into mole :

(a) 20 g of water (Atomic masses of hydrogen and oxygen are 1 and 16 respectively).

(b) 22 g of carbon dioxide (Atomic masses of carbon and oxygen are 12 and 16 respectively).

Q23. What is SONAR? Write two uses of SONAR technique. [3]

Q24. Describe the way Amoeba consumes its food with the help of diagrams. [3]

### SECTION -C

Q25. (a) A truck starts from rest and rolls down the hill with constant acceleration. It travels a distance of 500 m in 25 seconds. Find the force acting on it if its mass is 6 metric tons.  
(b) State Kepler's law of planetary motion. [5]

OR

(a) (i) Seema buys few grains of gold at the poles as per the instruction of one of her friends. She hands over the same when she meets her at the equator. Will the friend agree with the weight of gold bought? If not, why ?  
(ii) If the moon attracts the earth, why does the earth not move towards the moon ?  
(b) Sound requires a medium to travel. Justify experimentally.

Q26. (a) What was Thomson's model of an atom ?  
(b) Write any two observations of Rutherford's model of atom. [5]

Q27. What are the different aspects of maintaining a good health ? [5]

OR

What are the limitations in the approach of treating the infectious diseases ? Also mention the principles of prevention.

Q28. Draw the diagram of a plant cell. Label all the important parts and write a short definition of each part. [5]

Q29. Iron filings and sulphur were mixed together and divided into two parts, A and B. Part A was heated strongly while part B was not heated. Dilute hydrochloric acid was added to both the parts and evolution of gas was seen in both the cases. How will you identify the gases evolved? [5]

OR

(a) While diluting a solution of salt in water, a student by mistake added acetone (boiling point  $56^{\circ}\text{C}$ ). What technique can be employed to get back the acetone? Justify your choice.  
(b) Rohit mixed starch with water, boiled the mixture well and stirred it. What did he observe ?  
(c) What name is given to process of rusting of an article made up of iron and what type of change is it?

Q30. A 2000 kg car is moving at 25 m/s when brakes are applied. If the average force exerted by the brakes is 5000 N, find the distance travelled by the car before it comes to rest? [5]

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