

**MID TERM EXAMINATION**

CLASS IX

SCIENCE

Maximum Marks 80

Time Allowed: 3 Hrs.

**GENERAL INSTRUCTIONS:**

- i) The question paper comprises three sections- A, B and C. You are to attempt all the sections.
- ii) All questions are compulsory.
- iii) All questions of Section A, Section B and Section C are to be attempted separately.
- iv) All questions from 1 to 20 of Section A are one mark questions. These are to be answered in one word or one sentence.
- v) Question numbers 21 to 30 in Section B are three marks questions, to be answered in about 50 words.
- vi) Question numbers 31 to 36 in Section C are five marks questions, to be answered in about 70 words.

**SECTION A**

1. On converting  $25^{\circ}\text{C}$ ,  $38^{\circ}\text{C}$  and  $66^{\circ}\text{C}$  to Kelvin scale, the correct sequence of temperature will:
  - a) 298 K, 311 K and 339 K
  - b) 298 K, 300 K and 338 K
  - c) 273 K, 278 K and 543 K
  - d) 298 K, 310 K and 338 K
2. Tincture of iodine has antiseptic properties. This solution is made by dissolving \_\_\_\_\_
  - a) Iodine in potassium iodide
  - b) Iodine in Vaseline
  - c) Iodine in water
  - d) Iodine in alcohol
3. A particle is moving in a circular path of radius  $r$ . The displacement after half a circle would be \_\_\_\_\_
  - a) Zero
  - b)  $\pi r$
  - c)  $2r$
  - d)  $2\pi r$
4. An object of mass 2 kg is sliding with a constant velocity of  $4\text{ ms}^{-1}$  on a frictionless horizontal table. The force required to keep the object moving with the same velocity is \_\_\_\_\_.
  - a) 32 N
  - b) 0 N
  - c) 2 N
  - d) 8N
5. A body is thrown vertically upward with velocity  $u$ , the greatest height  $h$  to which it will rise is \_\_\_\_\_.
  - a)  $u/g$
  - b)  $u^2/2g$
  - c)  $u^2/g$
  - d)  $u/2g$
6. A water tanker filled upto  $2/3$  of its height is moving with a uniform speed. On sudden application of the brake, the water in the tank would \_\_\_\_\_.
  - a) Move backward
  - b) move forward
  - c) be unaffected
  - d) rise upward
7. Amoeba acquires its food through a process, termed \_\_\_\_\_.
  - a) Exocytosis
  - b) endocytosis
  - c) plasmolysis
  - d) both exocytosis and endocytosis

8. Cork cells are made impervious to water and gases by the presence of \_\_\_\_\_  
 a) Cellulose                      b) lipids                      c) suberin                      d) lignin
9. Which muscles act involuntarily?  
 i) Striated muscles    ii) smooth muscles    iii) cardiac muscles    iv) skeletal muscles  
 a) i) and ii)                      b) ii) and iii)                      c) iii) iv)                      d) i) and iv)
10. Which of the following are exotic breeds?  
 i) Brawn                      ii) Jersey                      iii) Brown swiss                      d) Jersey swiss  
 a) i) and iii)                      b) ii) and iii)                      c) i) and iv)                      d) ii) and iv)
11. Name the property of gases due to which it is possible to fill CNG in cylinders for using as fuel in cars.
12. Which epithelial tissue is present on the tongue?
13. Name two breeds of buffaloes.
14. What is the S.I. unit of acceleration?
15. Why is the motion of a circulating fan non-uniform?
16. Sunil throws a heavy stone out of his boat, As a result, the boat moves in opposite direction. Why?



**Note: Question No 17 to 18 choose the correct option**

17. Assertion (A): Milk is a pure substance.  
 Reason (R): Milk can be separated by physical process into its components like water, fat, proteins etc.
- a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A)  
 b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A)  
 c) Assertion (A) is true but reason R is false  
 d) Assertion (A) is false but reason R is true
18. Assertion (A): Mitochondria are semi-autonomous cell organelle.  
 Reason (R): Mitochondria generate energy.
- a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A)  
 b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A)  
 c) Assertion (A) is true but reason R is false  
 d) Assertion (A) is false but reason R is true
19. Assertion (A): Fisheries have important place in Indian economy.  
 Reason (R): It provides income and employment to millions of farmers and fishermen particularly in coastal states.
- a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A)  
 b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A)  
 c) Assertion (A) is true but reason R is false  
 d) Assertion (A) is false but reason R is true



20. Assertion (A): When we stop pedaling a bicycle it slows down.  
Reason (R): Force of friction always acts in the direction of motion.

- Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A)
- Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A)
- Assertion (A) is true but reason R is false
- Assertion (A) is false but reason R is true

### SECTION B

21. Give reasons:

- Why gases exert pressure on the walls of container.
- Gases undergo diffusion fast.

22. i) Name and define the process shown in the diagram.

- Which type of substance can be separated by this method?
- What can we interpret about the nature of ink?



23. i) After winters people pack off their woollens by keeping naphthalene balls in them.

With passage of time these balls become smaller in size. Why does this happen? What type of change is involved during this process?

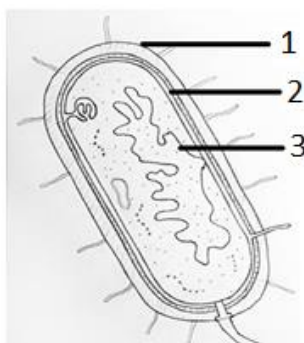
ii) How can you convert a saturated solution into an unsaturated solution?

**OR**

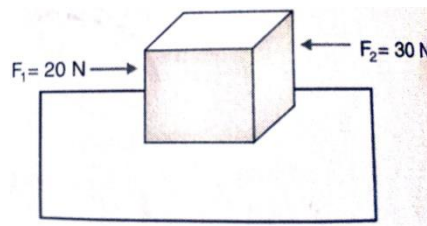
List three differences between properties of metals and non-metals.

24. i) Label the parts marked 1, 2 and 3 in a prokaryotic cell.

ii) Mention any three features of prokaryotic cells.



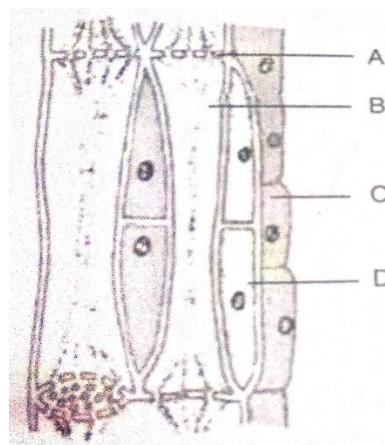
25. From a station 'X'; a train starts from the rest and attains a speed of 54 km/h in 10s. Then by applying brakes negative acceleration of  $2.5 \text{ ms}^{-2}$  is produced and it stops at station 'Y' in 6s. Find the distance between stations 'X' ns 'Y'.
26. State reasons for the following:
- All the cars are provided with seat belts.
  - It is dangerous to move out of a moving bus.
  - Road accidents at high speeds are very much worse than accidents at low speed.
27. i) Find the net force acting on the object.  
 ii) State the direction of the net force acting on the object.  
 iii) If the body still does not move under the application of these forces. What can be the possible reason for this? Identify the name of this extra force and its direction.



28. i) Which cell organelle would you associate with ATP production? How is this organelle able to make its own proteins?  
 ii) A student performed an experiment by placing the deshelled egg in a concentrated salt solution for five minutes. What changes did he observe in the egg? Give reason for the same.
29. Draw and describe the structure, function and location of the nervous tissue.

**OR**

- Name the tissue in the following figure:
- Identify the parts A, B, C and D.



30. a) Which of the two factors bring about loss of food grains during storage? Give one example for each.  
 b) State any two control measures to be taken before grains are stored.



## SECTION C

31. While heating ice in a beaker with a thermometer suspended in it, a student recorded the following observations:

Time (in min)	Temp. (in °C)
0	-3
1	-1
2	0
3	0
4	5
5	8
6	12
7	15
8	19
10	22
15	30
20	50
25	73
30	100
35	100

Based on the above observations, answer the following questions:

- i) State the change(s) observed between 2 min. to 3 min., and name the process involved.
  - ii) Between 30 min. to 35 min., the temperature remains constant. State the reason for this. Name the heat involved in the process and define it.
32. With a neat labeled diagram explain the process used for separating acetone (or alcohol) and water from their mixture. List two criteria that must be fulfilled for using this process.
33. Make a comparison and write down ways in which plant cells are different from animal cells.

**OR**

- a) Analyze the reason behind the following statements:
    - i) Epidermis is thicker in desert plants though it is usually single layered.
    - ii) Presence of waxy layer on the outer surface of plant.
  - b) Discuss the cell arrangement which supports the facts that epidermis is a protective tissue.
34. i) Briefly describe the formation of vermin-compost and green manure.  
 ii) How can poultry fowl be prevented from various diseases? State any three methods.
35. i) Using velocity time graph derive:  
 $v^2 - u^2 = 2as$ .
- ii) A ball is gently dropped from a height of 20 m. If its velocity increases uniformly at the rate of 10m/s, with what velocity will it strike the ground?

**OR**

- i) Define circular motion.
  - ii) What is the difference between uniform motion in a straight line and circular motion?
  - iii) An athlete completes one round of a circular track of diameter 200 m in 40 sec. What will be the distance covered and the displacement at the end of 2 min. and 20 sec.?
36. What is meant by 'inertia'? What are different types of inertia? Give two examples in each case.

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