



परमाणु ऊर्जा शिक्षण संस्था
ATOMIC ENERGY EDUCATION SOCIETY
आवधिक परीक्षा / Periodic Test II (2025-26)

कक्षा /Class: IX

अवधि / Duration: 3 घंटे/Hours

विषय /Subject: SCIENCE

अधिकतम अंक / Maximum Marks: 80

General Instructions:

- (i) This question paper consists of 39 questions in 3 sections .Section A is Biology, Section B is Chemistry and section C is Physics.
- (ii) All questions are compulsory .However an internal choice is provided in some questions .
A student is expected to attempt only one of these questions.

SECTION: A

1. Which of the following statements about cells is incorrect? [1]
(A) All living organisms are made up of cells (B) Cells are the basic building units of life
(C) All cells arise from pre-existing cells (D) All cells have exactly the same shape and size
2. If the animal cell is placed in pure water (a hypotonic solution), what is likely to happen to the cell? [1]
(A) The cell will shrink as water moves out
(B) The cell will swell and may burst as water moves in
(C) The cell will remain the same size as there is no water movement
(D) The cell will undergo plasmolysis
3. A prokaryotic cell doesn't possess [1]
(A) Cell membrane (B) cell wall (C) nuclear membrane (D) both (A) &(B)
4. Chlorenchyma and aerenchyma are modified/ specialized [1]
(A) Phloem (B) parenchyma (C) collenchyma (D) Sclerenchyma
5. Tendon helps to connect [1]
(A) bone to bone (B) muscle to bone (C) muscle to muscle (D) all the above
6. Which of the following tissues has dead cells? [1]
(A) Parenchyma (B) Sclerenchyma (C) Collenchyma (D) Epithelial tissue

7. Cartilage is not found in [1]

- (A) Nose (B) Ear (C) Kidney (D) Larynx

The following two questions consist of two statements- Assertion (A) and Reason (R).

Answer these questions by selecting the appropriate option given below:

- a) *If both assertion and reason are true and reason is the correct explanation of assertion.*
b) *If both assertion and reason are true but reason is not the correct explanation of assertion*
c) *If assertion is true but reason is false.*
d) *If assertion is false and reason is true.*

8. **Assertion (A):** Gaseous exchange takes place in the cells. [1]

Reason (R): Concentration of gases is different inside the cell and outside the cell.

9. **Assertion (A):** The inner lining of intestine has tall epithelial cells. [1]

Reason (R): Columnar epithelium facilitates absorption and secretion.

10. Give the name of the following: [2]

- (a) Tissue concerned with the conduction of food materials in plants
(b) Plant tissue capable of cell division.
(c) Minutes pores present in the leaf epidermis.
(d) Connective tissue with a fluid matrix

11. Attempt either option A or B .

A. Name the cell organelle which are known as : [2]

- (a) Control centre of the cell (b) Power house of the cell
(c) Kitchen of the cell (d) Suicidal bag of the cell

OR

B .Match the following A & B [2]

- | (A) | (B) |
|----------------------------------|---------------------|
| (a) Smooth endoplasmic reticulum | (i) Amoeba |
| (b) Lysosome | (ii) Detoxification |
| (c) Nucleoid | (iii) Bacteria |
| (d) Food vacuoles | (iv) Suicidal bag |

12. What is DNA? Write its function. [2]

13. Differentiate between plant & animal cells. [2]

14. Write two differences between the muscles present in the heart and the limbs of man. Also draw labeled diagrams of these two kinds of muscles. [3]

15. Neuron may be packed to form structures such as the brain of vertebrates or the neural ganglions of insects. The number of neurons and their relative abundance in different parts of the brain is a determinant of neural function and consequently of behavior.

Attempt either subpart A or B

- (A) Write the functions of nervous tissue. [2]

OR

- (B) Draw a well labeled diagram of a neuron. [2]
(C) What is neuron? [1]
(D) Which parts our body composed of nervous tissue? [1]

16. Attempt either option A or B .

- A.** Answer the followings: [5]

- (a) Name the constituents of phloem tissues.
- (b) Write the specific function of cardiac muscle.
- (c) State two differences between tendon and ligament.
- (d) Name the tissue that:
 - (i) Forms inner lining of our mouth
 - (ii) forms soft parts of leaf, stem, root and fruit
- (e) Write two functions of adipose tissues.

OR

- B.** Give reasons:

- (a) Meristematic cells have a prominent nucleus and dense cytoplasm but they lack vacuole.
- (b) Intercellular spaces are absent in sclerenchymatous tissues.
- (c) We get a crunchy and granular feeling when we chew pear fruit.
- (d) Branches of a tree move and bend freely in high wind velocity.
- (e) It is difficult to pull out the husk of a coconut tree.

Section – B

17. Which of the following statements is wrong? [1]

- (a) Matter is made up of very small particles which can be seen only under a microscope.
- (b) The particles of matter attract each other.
- (c) The particles of matter keep on moving constantly.
- (d) The particles of all matter have space between them.

18. A mixture of sugar and water is: [1]
(a) Heterogeneous and shows Tyndall effect
(b) Homogeneous and shows Tyndall effect
(c) Heterogeneous and does not shows Tyndall effect
(d) Homogeneous and does not shows Tyndall effect
19. Which of the following is physical change ? [1]
(a) Lime into lime water (b) Rusting of Iron
(c) Bending of an iron rod (d) Burning of hydrogen gas
20. On converting 25°C , 38°C and 66°C to Kelvin scale, the correct sequence of temperature will be- [1]
(a) 298 K, 311 K and 339 K (b) 298 K, 300 K and 338 K
(c) 290 K, 302 K and 543 K (d) 298 K, 310 K and 338 K
21. When a pinch of common salt is dissolved in 50 ml. of water taken in a graduated cylinder, which of the following observation is correct? [1]
(a) Level of water in the cylinder decreases.
(b) Level of water in the cylinder increases.
(c) Level of water in the cylinder remains the same.
(d) All the observations are correct.
22. Which condition out of the following will increase the evaporation of water ? [1]
(a) Increase in temperature of water
(b) Decrease in temperature of water
(c) less exposed surface area of water
(d) Adding common salt to water
23. Which of the following is a pure substance ? [1]
(a) Kerosene oil
(b) Steel
(c) Sodium Chloride
(d) Vulcanized rubber

The following question consists of two statements- Assertion (A) and Reason (R).

Answer the question by selecting the appropriate option given below:

- a) If both assertion and reason are true and reason is the correct explanation of assertion.
b) If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false.

d) If assertion is false and reason is true.

24. **Assertion:** Milk is heterogeneous mixture.

Reason: It consist fat particles dispersed in water.

25. Differentiate between evaporation and boiling. [2]

26. **Attempt either option A or B**

A. (i) Calculate the amount of water required to prepare 500 g of 2.5% solution of sugar. [2]

(ii) Give an example of non-aqueous solution. [1]

OR

B. (i) Draw the diagram of sublimation process of camphor. [2]

(ii) What is dry ice? [1]

27. Differentiate between True solution, Suspension and colloidal solution on the basis of

(i) Size of particles of solute

(ii) Filtration process

(iii) Tyndall effect [3]

28. Rahul poured some water into two identical cups, A and B. he placed cup A in direct sunlight and cup B in the shade. He observed the water levels in both cups after a few hours.

From the above statements answer the following questions:

(A) In which cup, A or B, will the water level drop faster and why? [2]

Attempt either B or C

(B) If Rahul had added some salt to the water in both cups, how would this affect the rate of evaporation? [1]

OR

(C) How surface area affects rate of evaporation ? [1]

(D) List two factors, other than sunlight and temperature that affect the rate of evaporation [1]

29. **Attempt either option A or B**

A. (a) $\text{Fe} + \text{S} \longrightarrow \text{FeS}$ In this equation 'Fe + S' is heterogeneous mixture and FeS is Homogeneous mixture, explain why? [2]

(b) Give one word for the following: [2]

- (i) Name the property in which metal can be hammered into thin sheets.
- (ii) Name the property in which metal can produce ringing sound when struck.
- (iii) One example of metalloid
- (iv) Give chemical name of common salt.

(c) Why rusting of iron is an example of chemical change? [1]

OR

B. (a) Why the path of beam is not visible in the beaker containing salt solution? [1]

(b) Why the colloidal solutions show the phenomenon of Tyndall effect? [2]

(c) Give any one example of colloidal solution. [1]

(d) What is saturated solution? [1]

Section – C

30. A car travels 10 m in 5 seconds, 20 m in the next 10 seconds, and 30 m in the last 10 seconds. The average speed of the motion is: [1]

- (a) 2.4 ms^{-1} b) 2.2 ms^{-1} c) 30 ms^{-1} d) 2.0 ms^{-1}

31. A moving body is covering a distance directly proportional to the square of time. The acceleration of the body is: [1]

- (a) constant b) increasing c) decreasing d) zero

The following question consists of two statements- Assertion (A) and Reason (R).

Answer the question by selecting the appropriate option given below: [1]

- a) *If both assertion and reason are true and reason is the correct explanation of assertion.*
- b) *If both assertion and reason are true but reason is not the correct explanation of assertion*
- c) *If assertion is true but reason is false.*
- d) *If assertion is false and reason is true.*

32. **Assertion (A):** The bus travels 250 km from Delhi to Jaipur towards the West and then comes back to the starting point. Total displacement is zero.

Reason (R): The average velocity of the bus for the whole journey (both ways) is 0 kilometers per hour

33. Differentiate between distance and displacement? (any two difference) [2]

- 34 According to the third law of motion, when we push on an object, the object pushes back on us with an equal and opposite force. If the object is a massive truck parked along the roadside, it will probably not move. A student justifies this by answering that the two opposite and equal forces cancel each other. Comment on this logic and explain why the truck does not move. [2]

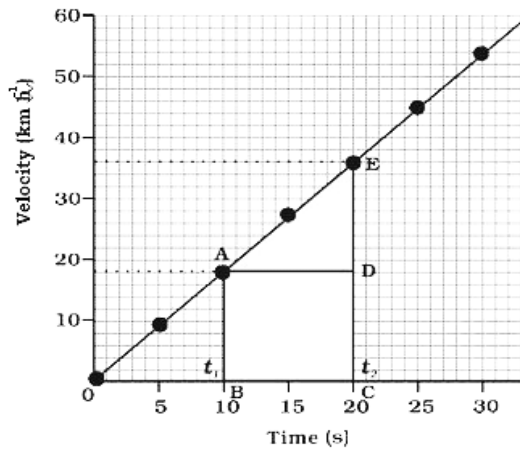
OR

A sedan car of mass 200kg is moving with a certain velocity. It is brought to rest by the application of brakes, within a distance of 20m when the average resistance being offered to it is 500N. What was the velocity of the motor car? [2]

- 35 A bus starting from rest moves with a uniform acceleration of 0.1 m s^{-2} for 2 minutes. [3]
Find:
(a) The speed acquired. (b) The distance travelled.
- 36 (a) Explain, why passengers sitting in bus feel backward jerk when it suddenly starts? [2]
(b) Why is the recoil of a heavy gun, on firing, not as strong as that of a light gun using the same cartridge? [1]
37. A cricket ball of mass 70 g moving with a velocity of 5 m/s is stopped by a player in 0.5 s. What is the force applied by the player to stop the ball? [3]

38. Read the following text carefully and answer the questions that following questions

In the velocity - time graph for the motion of the car. The nature of the graph shows that velocity changes by equal amounts in equal intervals of time. For all uniformly accelerated motion, the velocity - time graph is a straight line. [4]



(a) What does the slope of a velocity - time graph represent? [1]

(b) What does the area under the curve of a velocity - time graph represent? [1]

(c) What does the area under the curve of acceleration- time graph represent?

OR [2]

If the displacement of an object is proportional to the square of time, how does the object's motion occur? [2]

39 (a) Write Newton second law of motion and prove that magnitude of force [3]
is equal to product of mass and acceleration.

(b) Define one Newton force. [2]

OR

(a) Define balanced and unbalanced forces. Why is acceleration of a body not possible under the action of balanced forces? [3]

(b) Define Inertia of motion. [2]
