



विद्या सर्वार्थ साधिका

ANANDALAYA
PERIODIC TEST -1
Class : IX

Subject: Science (086)

Date : 13-07-2023

MM : 40

Time: 1 Hr. 30 min.

General Instructions:

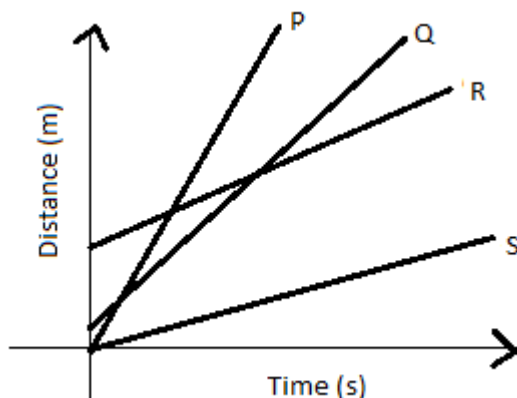
- (1) There are 17 questions in all. All questions are compulsory.
- (2) This question paper has five sections: Section A, Section B, Section C, Section D and Section E. All the sections are compulsory.
- (3) Section A consists of 8 multiple choice questions of 1 mark each, Section B consists of 2 very short questions of 2 marks each, Section C consists of 2 short answer type questions of 3 marks each, section D consists of 2 long answer questions of 5 marks each and Section E consists 3 source-based/case study based questions of 4 marks each with sub-parts.

SECTION A

1. An object moving in a circular path of radius r reaches the diametrically opposite point. The displacement and distance travelled respectively will be _____ (1)

(A) $0\text{ m}, 2\pi r$ (B) $r, 2\pi r$ (C) $2r, \pi r$ (D) $2r, 2r$

2. The (distance - time) graphs show the motion of four objects P, Q, R, S. Which one of them has the highest velocity? (1)



(A) P (B) Q
(C) R (D) S

3. Latent heat of fusion is amount of: _____ (1)

(A) heat energy required to change 1 kg solid into liquid completely at its melting point.
(B) heat energy required to convert 1 kg solid into liquid at room temperature.
(C) heat energy required to change 1 g of solid into liquid completely.
(D) heat energy required to change 1 kg of solid into liquid at any temperature.

4. Which one of the following sets of phenomena would increase with the rise in the temperature? (1)

(A) Diffusion, evaporation, compression of gases.
(B) Evaporation, compression of gases, solubility.
(C) Evaporation, diffusion, expansion of gases.
(D) Evaporation, solubility, diffusion, compression of gases.

5. Which of the following statements is the correct definition of osmosis? (1)

(A) Movement of solvent molecules from its region of higher concentration to its region of lower concentration through selectively permeable membrane.
(B) Movement of solute molecules from its region of higher concentration to its region of lower concentration through semi permeable membrane.

- (C) Movement of water molecules from its region of higher concentration to its region of lower concentration through semi permeable membrane.
- (D) Movement of solute molecules from its region of higher concentration to its region of lower concentration through semi permeable membrane.

6. The fibrous structure that contains hereditary information, that are visible under the compound microscope only during cell division is _____ (1)
- (A) Gene (B) Chromosomes (C) DNA (D) RNA

For question numbers 7 and 8, two statements are given-one labelled Assertion and the other labelled Reason. Select the correct answer to these questions from the codes (A), (B), (C) and (D) as given below.

- (A) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (B) Both Assertion and Reason are true but Reason is NOT the correct explanation of Assertion.
- (C) Assertion is true but Reason is false
- (D) Assertion is false and Reason is also false.

7. Assertion : An object may have acceleration even if it is moving with uniform speed. (1)
Reason : An object may be moving with uniform speed but it may be changing its direction of motion.
8. Assertion: The rate of evaporation of water in a plate is higher than that in a cup. (1)
Reason: The rate of evaporation decreases with increase in humidity.

SECTION B

9. An object travels 20 m in 4 s and then another 20 m in 1 s. What is the average speed of the object? (2)
10. (a) State one similarity and one difference between evaporation and boiling. (2)
(b) We wear cotton clothes in summer. Why?

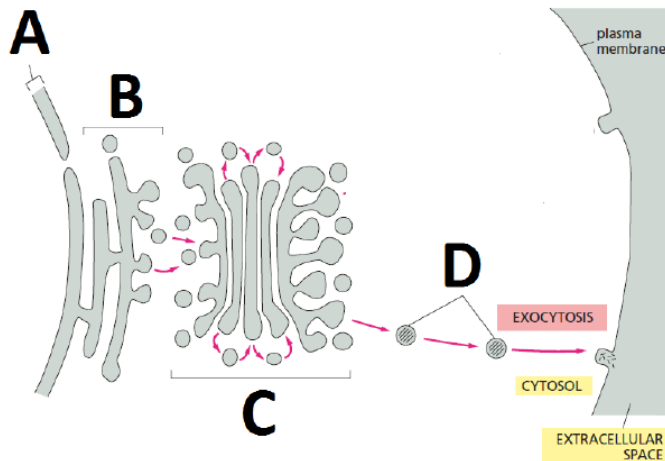
SECTION C

11. (a) Wax is heated in a China dish. How will the following change during heating– (3)
(i) kinetic energy of particle
(ii) inter particle distance
(b) Melting points of three substances A, B, C are 52°C, 175°C and 80°C. Arrange them in the decreasing order of the inter-particle force of attraction in each of them. Give reason for your answer.
12. When an onion peel placed in a hypotonic solution, the onion cells become turgid but do not burst. (3)
(a) Why do the onion cells become turgid?
(b) The onion cells do not burst when the cells became fully turgid. Why?
(c) What would happen if the turgid cells are placed in hypertonic solution?

SECTION D

13. (a) Define acceleration. Give its SI units. (5)
(b) Sketch one (s-t) graph one (v-t) graph which represents uniform motion.
(c) Give any one equation motion for displacement for a uniformly accelerated motion.

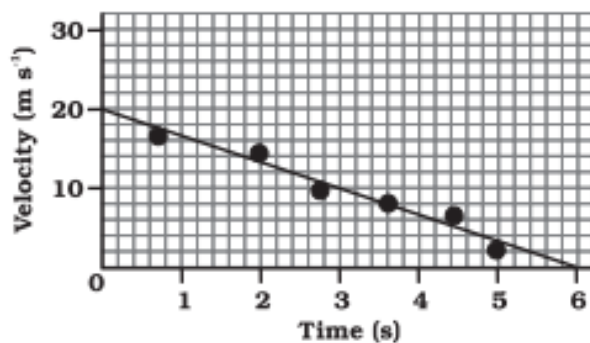
14. Answer the following question based on the figure given below that depicts endomembrane system that exists in a eukaryotic cell. (5)



- Identify the parts labelled as A, B, C and D
- Write the function of part C.
- Explain the coordination that exists between parts B and C in the cell.

SECTION E

15. A linear (v-t) graph represents a uniformly accelerated motion. A non-linear (v-t) graph represents non-uniform motion with varying acceleration. From a (v-t) graph we can find the acceleration of the object. We can also find the displacement from this graph. The following graph is a (v-t) graph. Study carefully and answer the questions that are given below.



- How will you find the displacement from a (v-t) graph? (1)
- What type of motion does this represent? (1)
- Calculate the displacement of the object from the graph. (2)

OR

- Calculate the acceleration of the object from the graph.

16. In certain investigatory project 150 ml of water is taken in each of the four beakers A, B, C and D. Beaker A and B are maintained at temperature 25°C while C and D are maintained at temperature 65°C. Four crystals of potassium permanganate of approximately same mass (say 2g) are taken and two of them are ground into powder form. Now, crystals are added in beaker A and C while powdered form of the salt are added in beaker B and D respectively

- In which beaker the intermixing will be the quickest? (1)
 (A) C (B) D (C) A (D) B
- Rate of intermixing will be: (1)
 (A) Same in A and C (B) Same in A and B
 (C) Quicker in B than in A (D) Slower in C as compared to that in A
- Phenomenon responsible for intermixing is called _____ (1)
 (A) Diffusion of solid into liquid (B) Diffusion of liquid into solid
 (C) Sedimentation (D) Freezing

(iv) What is the colour of the solution after mixing? (1)

OR

(iv) Which of the following evidence is not provided by the experimental activity?

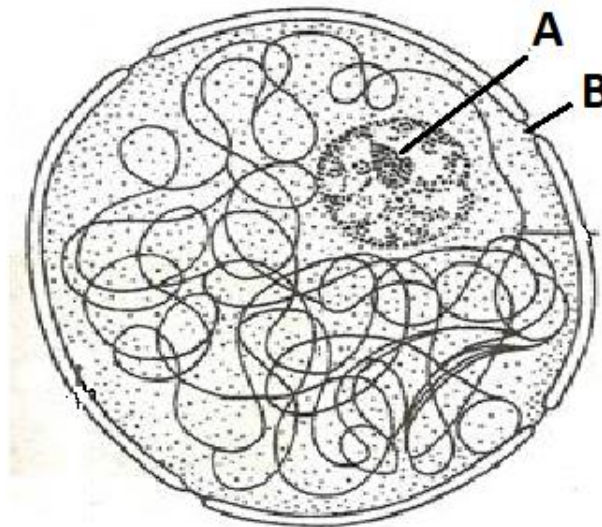
- (A) Particles of matter are in a state of motion.
- (B) Particle motion increases with rise in temperature
- (C) Particles of matter are stationary
- (D) There are empty spaces between the molecules.

17. Read the passage given below and answer the following questions:

Eukaryotes represent a diverse domain of organisms whose cells have nuclei. All animals, plants, fungi and many unicellular organisms are eukaryotes. Eukaryotic cells have a variety of internal membrane bound structures, called organelles and a cytoskeleton which defines the cell's organisation and shape. The nucleus stores the cell's DNA into linear bundles called chromosomes.

(i) What happens if cell nucleus gets destroyed? (1)

(ii) Identify the figure given below. Name the part labelled as 'B'. (1)



(iii) Explain the cellular organisation of eukaryotic cells? (2)

OR

(iii) Write two differences between prokaryotic and eukaryotic cell.