

CBT CLASS IX SCIENCE (FEBRUARY)

Q1 If water turns into ice at a pressure of atmosphere at 273K, then the temperature of this system in this process

- (a) Decreases
- (b) Increases
- (c) Remains same
- (d) None of these

Answer: (c) Remains same

Feedback : The temperature of any substance remains constant throughout a state shift since the heat energy produced is used up in changing the state of matter and also for breaking numerous bonds or attractive forces.

Q2 The formulae of an oxide of an element M is MO . The valency of M is

- (a) 1
- (b) 2
- (c) 3
- (d) 4

Answer: (b) 2

Feedback : How to find the valency of an element:

The valency of an element depends on the electrons present in the outermost shell, that is, valence electrons.

An element always tries to attain stability by gaining or losing electrons to obtain the octet (8 electrons in the outermost shell). So the number of valence electrons can vary from 1 to 8.

If the valence electrons of the element vary from 1 to 4. Then, the valence of electrons itself is their valency.

If the valence electrons are more than 4, subtract the number of valence electrons from the 8 (octet).

Q3 A cell having two boundaries, the outer being cell wall and the inner being plasma membrane. The inherent property of this pair moving from outside to inside is

- (a) Semipermeable and Permeable
- (b) Semipermeable and Semipermeable
- (c) Permeable and Semipermeable
- (d) Permeable and Semipermeable

Answer : (c) Permeable and Semipermeable

Feedback: The cell wall is fully permeable to smaller molecule. The membrane is selectively permeable and controls the movement of the substance into and outside the cell. Functions include protection from the external environment.

Q4 Which one of the following is correct electronic configuration of sodium?

- (a) 2,8
- (b) 8,2,1
- (c) 2,1,8
- (d) 2,8,1

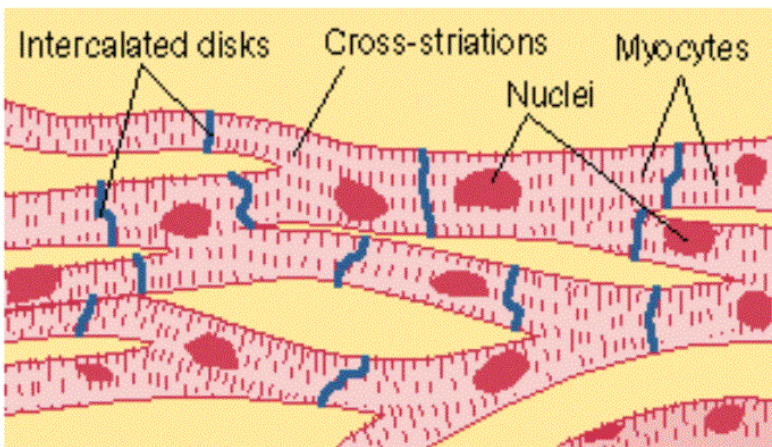
Answer: (d) 2,8,1

Q5 In a practical laboratory, a student while observing the slide of tissue with the help of a microscope, found a bunch of cylindrical shaped cells having interconnections. The slide belongs to

- (a) Adipose tissue
- (b) Heart muscles
- (c) Smooth muscles
- (d) Skeletal muscles

Answer: (b) Heart muscles

Feedback : Cardiac muscle cells form a highly branched cellular network in the heart. They are connected end to end by intercalated disks and are organized into layers of myocardial tissue that are wrapped around the chambers of the heart.



Q6 In which of the following situations, the distance moved and the magnitude of displacement are equal?

- (a) A pendulum is moving to and fro
- (b) Moon is revolving around the earth
- (c) A boy is sitting in moving merry go round
- (d) A bus is moving on a straight road

Answer: (d) A bus is moving on a straight road

Feedback: Distance is the measurement of paths taken by an object. In simple words, distance is something an object covers in a given time 't.' However, displacement is the shortest path taken by an object during its motion.

Q7 Two objects have masses in the ratio 1:2. If the forces acting on them are in the ratio 2:1, then ratio of their acceleration is

- (a) 1:1
- (b) 1:2
- (c) 2:1
- (d) 4:1

Answer : (d) 4:1

Feedback : Force(F) = mass(m) x acceleration(a)

$$F_1/F_2 = m_1 a_1 / m_2 a_2$$

$$2/1 = 1/2 \times a_1 / a_2$$

$$a_1 / a_2 = 4/1 \text{ or } 4:1$$

Q8 How fast should a man weighing 600N run to achieve a kinetic energy of 750J? (Take $g=10$)

- (a) 5m/s
- (b) 7m/s
- (c) 10m/s
- (d) 7.5m/s

Answer: (a) 5m/s

Q9 When we go from solid state to gaseous state , then the speed of sound

- (a) Increases
- (b) Increases or Decreases
- (c) Decreases

(d) Constant

Answer: (c) Decreases

Feedback: When we go from solid to gaseous state, the speed of sound decreases.

The speed of sound in solid medium is faster than the gases because the molecules in a solid medium are much closer together than the gases, allowing sound wave to travel more quickly through it.

Q10 Which of the following fishes is a surface feeder?

(a) Rohus

(b) Mrigals

(c) Common Carp

(d) Catlas

Answer : (d) Catlas

Feedback : fishes that have a straight back and travel to the surface in order to gather food are called surface feeder fishes.

Catlas are pelagic fishes.

They feed on phytoplankton and crustaceans present on the surface.

They are highly rich in nutrients.