9SAIST04iWar--T0

1 (Type:1, Mark:4.00, Ref:1, Unit: 00) ::

The force of gravitation between two objects becomes [BLANK1] times when the distance between them is reduced to half. **[1]** (a) **four** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

2 (Type:1, Mark:4.00, Ref:2, Unit: 00) ::

[BLANK1] [1] (a) **Thallophyta** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

3 (Type:1, Mark:4.00, Ref:3, Unit: 00) ::

According to Newton's first law of motion.

"An obejct at rest or in uniform motion, will remain at rest or in uniform motion unless an [BLANK1] force acts on it." **[2]**

[Refer: Workbook, 9PS02, Pg. 32, HA Qn. 13**] (a) **unbalanced** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

4 (Type:1, Mark:4.00, Ref:4, Unit: 00) ::

Given, mass of sodium chloride (solute) = 18 g

Mass of water (solvent) = 82 g

Mass of solution = Mass of solute + Mass of solvent.

= 18 g + 82 g = 100 g.

Mass by mass percentage of solution = $\frac{\text{Mass of solute}}{\text{Mass of solution}} \times 100$

18×100/100 =[BLANK1] . **[2]**

[Refer: Workbook, 9CS02, Pg. 36, Hope Qn. 55] (a) **18%** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

5 (Type:1, Mark:4.00, Ref:5, Unit: 00) ::

We know that $F = \frac{G.M \times m}{d^2}$

$= \frac{6.7 \times 10^{-11}\ \text{Nm}^2\ \text{kg}^{-2} \times 6 \times 10^{24}\ \text{kg} \times 1\ \text{kg}}{(6.4 \times 10^6 \text{m})^2}$

$= \frac{6.7 \times 6 \times 10}{6.4 \times 6.4}$ =[BLANK1] . **[2]** (a) **9.8144** (b) (c) (d)
Ans.**a**

Sol^n :
Scope :

(Type:1, Mark:4.00, Ref:6, Unit: 00) ::

6 The cell [BLANK1] of parenchyma cells is very thin, collenchyma cells is thin with irregularly thickened at corners and sclerenchyma cells is very thick and dead.It is so thick that there is no internal space inside the cell.

[work book qn 12**] (a) **wall** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

(Type:1, Mark:4.00, Ref:7, Unit: 00) ::

First case : Initial velocity u = [BLANK1]

Final velocity v = [BLANK2] m/s

Time t = 40 s, a = ?

We know that $a = \frac{(v - u)}{t}$

$\Rightarrow$ a = (10 –0) m/s / 40 s = [BLANK3] ms^2

Second case : Initial velocity u = 10 m/s

7 Final velocity v = 5 m/s

Time t = 10 s, a = ?

We know that $a = \frac{(v - u)}{t}$

$\Rightarrow$ a = (5 – 10) m/s / 10 s = [BLANK4] ms^2

In the first case, the car is accelerated and in the second case the car is retarded. **[3]**

[Refer: Workbook, 9PS01, Pg. 14, HA Qn. 19] (a) **0** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

(Type:1, Mark:4.00, Ref:7, Unit: 00) ::

First case : Initial velocity u = [BLANK1]

Final velocity v = [BLANK2] m/s

Time t = 40 s, a = ?

8 We know that $a = \frac{(v - u)}{t}$

$\Rightarrow$ a = (10 –0) m/s / 40 s = [BLANK3] ms^2

Second case : Initial velocity u = 10 m/s

Final velocity v = 5 m/s

Time t = 10 s, a = ?

We know that $a = \frac{(v - u)}{t}$

$\Rightarrow$ a = (5 – 10) m/s / 10 s = [BLANK4] ms^2

In the first case, the car is accelerated and in the second case the car is retarded. **[3]**

[Refer: Workbook, 9PS01, Pg. 14, HA Qn. 19] (a) **10** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

(Type:1, Mark:4.00, Ref:7, Unit: 00) ::

First case : Initial velocity u = [BLANK1]

Final velocity v = [BLANK2] m/s

Time t = 40 s, a = ?

We know that $a = \frac{(v - u)}{t}$

$\Rightarrow$ a = (10 –0) m/s / 40 s = [BLANK3] ms^2

Second case : Initial velocity u = 10 m/s

9 Final velocity v = 5 m/s

Time t = 10 s, a = ?

We know that $a = \frac{(v - u)}{t}$

$\Rightarrow$ a = (5 – 10) m/s / 10 s = [BLANK4] ms^2

In the first case, the car is accelerated and in the second case the car is retarded. **[3]**

[Refer: Workbook, 9PS01, Pg. 14, HA Qn. 19] (a) **0.25** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

(Type:1, Mark:4.00, Ref:7, Unit: 00) ::

First case : Initial velocity u = [BLANK1]

Final velocity v = [BLANK2] m/s

Time t = 40 s, a = ?

10 We know that $a = \frac{(v - u)}{t}$

$\Rightarrow$ a = (10 –0) m/s / 40 s = [BLANK3] ms^2

Second case : Initial velocity u = 10 m/s

Final velocity v = 5 m/s

Time t = 10 s, a = ?

We know that $a = \frac{(v - u)}{t}$

$\Rightarrow$ a = (5 – 10) m/s / 10 s = [BLANK4] ms^2

In the first case, the car is accelerated and in the second case the car is retarded. **[3]**

[Refer: Workbook, 9PS01, Pg. 14, HA Qn. 19] (a) **– 0.5** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

(Type:1, Mark:4.00, Ref:8, Unit: 00) ::

11 Intermolecular force of attraction between particles of a matter makes it a solid a liquid or a gas. [BLANK1] intermolecular force of attraction results in closely packed particles which makes a solid. Weaker intermolecular force of attraction means particles are less compactly packed which makes a liquid. Almost no intermolecular force of attraction allows the particles to move randomly giving a gas. **[3]**

[Refer: Encadin, Vol. VI, No. 3, Model Qn. 08] (a) **High** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

(Type:1, Mark:4.00, Ref:9, Unit: 00) ::

12 **Solution:** "A [BLANK1] mixture of two or more substances is called a solution."

Solute: "The substance that is dissolved or undergoes a physical state change, is called solute."

Solvent: "The substance that dissolves the other substance, is called solvent."

Usually, the substance that is present in less quantity is termed as solute and in greater quantity is termed as solvent.

In a solution of sugar (Sugar dissolved into water), sugar is solute and water is solvent. Sugar particles undergo a physical state change. (Big particles change to fine particles).**[3]**

[Refer: Workbook, 9CS02, Pg. 31, HA Qn. 23**] (a) **homogeneous** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

(Type:1, Mark:4.00, Ref:10, Unit: 00) ::

13 [BLANK1] .

Two characteristic features of Monera are

(i) These organisms lack well-defined cellular [BLANK2] .

(ii) The nuclear material consists of a coiled, [BLANK3] strand of DNA, which is not enclosed by a nuclear membrane. (a) **Monera** (b) (c) (d)
Ans.**a**
Sol^n :
Scope :

(Type:1, Mark:4.00, Ref:10, Unit: 00) ::

14 [BLANK1] .

Two characteristic features of Monera are

(i) These organisms lack well-defined cellular [BLANK2] .

(ii) The nuclear material consists of a coiled, [BLANK3] strand of DNA, which is not enclosed by a nuclear membrane. (a) **organelles** (b) (c) (d)
Ans.**a**
Sol^{n} :
Scope :

(Type:1, Mark:4.00, Ref:10, Unit: 00) ::

[BLANK1] .

Two characteristic features of Monera are

15 (i) These organisms lack well-defined cellular [BLANK2] .

(ii) The nuclear material consists of a coiled, [BLANK3] strand of DNA, which is not enclosed by a nuclear membrane. (a) **naked** (b) (c) (d)
Ans.**a**
Sol^{n} :
Scope :

(Type:1, Mark:4.00, Ref:11, Unit: 00) ::

Mitochondria has the following special features with respect to its membrane covering.

(i) **Double membrane --**Outer membrane is [BLANK1] and inner membrane is deeply folded to form [BLANK2] .

16 (ii) **Folds -** provide increased surface area for [BLANK3] synthesis. [3]

[Refer qn 65**] (a) **porous** (b) (c) (d)
Ans.**a**
Sol^{n} :
Scope :

(Type:1, Mark:4.00, Ref:11, Unit: 00) ::

Mitochondria has the following special features with respect to its membrane covering.

(i) **Double membrane --**Outer membrane is [BLANK1] and inner membrane is deeply folded to form [BLANK2] .

17 (ii) **Folds -** provide increased surface area for [BLANK3] synthesis. [3]

[Refer qn 65**] (a) **crystae** (b) (c) (d)
Ans.**a**
Sol^{n} :
Scope :

(Type:1, Mark:4.00, Ref:11, Unit: 00) ::

Mitochondria has the following special features with respect to its membrane covering.

(i) **Double membrane --**Outer membrane is [BLANK1] and inner membrane is deeply folded to form [BLANK2] .

18 (ii) **Folds -** provide increased surface area for [BLANK3] synthesis. [3]

[Refer qn 65**] (a) **ATP** (b) (c) (d)
Ans.**a**
Sol^{n} :
Scope :

19 (Type:1, Mark:4.00, Ref:13, Unit: 00) ::

(i) A solution in which no more of the solid (solute) can be dissolved at a given [BLANK1] is called a saturated solution.

(ii) A pure substance consists of a [BLANK2] type of particles and it cannot be separated into other kind of matter by any physical process.

(iii) A colloidal solution is said to be intermediate state of the solution and the suspension. It is neither a true solution nor a suspension. In colloidal solution, the particle size is between 1 nm to 100 nm.

(iv) A suspension is a heterogeneous [BLANK3] of a solid in a liquid. A suspension is formed when a liquid contains small solid particles which are not soluble in it but are visible to naked eyes. If such a mixture is left undisturbed, the solid particles slowly settle down to the bottom under the effect of gravity. If the particle size of the solid is greater than 10^{-7} metres (100 nm) and it is insoluble in the given liquid, then the solid particles remain suspended in the liquid. This is called a suspension. For example, mud water, sand water, coarse lime stone particles in water. **[5]**

[Refer: Workbook, 9CS02, Pg. 32, HA Qn. 26] (a) **temperature** (b) (c) (d)
Ans.**a**
Sol^{n} :
Scope :

20 (Type:1, Mark:4.00, Ref:13, Unit: 00) ::

(i) A solution in which no more of the solid (solute) can be dissolved at a given [BLANK1] is called a saturated solution.

(ii) A pure substance consists of a [BLANK2] type of particles and it cannot be separated into other kind of matter by any physical process.

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[Refer: Workbook, 9CS02, Pg. 32, HA Qn. 26] (a) **single** (b) (c) (d)
Ans.**a**
Sol^{n} :
Scope :

21 (Type:1, Mark:4.00, Ref:13, Unit: 00) ::

(i) A solution in which no more of the solid (solute) can be dissolved at a given [BLANK1] is called a saturated solution.

(ii) A pure substance consists of a [BLANK2] type of particles and it cannot be separated into other kind of matter by any physical process.

(iii) A colloidal solution is said to be intermediate state of the solution and the suspension. It is neither a true solution nor a suspension. In colloidal solution, the particle size is between 1 nm to 100 nm.

(iv) A suspension is a heterogeneous [BLANK3] of a solid in a liquid. A suspension is formed when a liquid contains small solid particles which are not soluble in it but are visible to naked eyes. If such a mixture is left undisturbed, the solid particles slowly settle down to the bottom under the effect of gravity. If the particle size of the solid is greater than 10^{-7} metres (100 nm) and it is insoluble in the given liquid, then the solid particles remain suspended in the liquid. This is called a suspension. For example, mud water, sand water, coarse lime stone particles in water. **[5]**

[Refer: Workbook, 9CS02, Pg. 32, HA Qn. 26] (a) **mixture** (b) (c) (d)
Ans.**a**
Sol^{n} :
Scope :

(Type:1, Mark:4.00, Ref:14, Unit: 00) ::

Given, Mass of first object (m_1) = 100 g = 0.1 kg

Mass of second object (m_2) = 200 g = 0.2 kg

Velocity of first object (v_1) = 2 ms^{-1}

Velocity of second object (v_2) = 1 ms^{-1}

Momentum just before impact = $m_1v_1 + m_2 v_2$

= 0.1 × 2 + 0.2 × 1 kg ms^{-1} .

Velocity of first object after impact = 1.67 ms^{-1}

22 Let velocity of second object is v.

According to law of conservation of [BLANK1] ,

0.1 × 2 + 0.2 × 1 = 0.1 × 1.67 + 0.2 × v

0.2 + 0.2 = 0.167 + 0.2 v

or 0.2 v = 0.4 = 0.167

0.2 v = 0.233

$v = \frac{0.233}{0.2} = \frac{2.33}{2}$ =[BLANK2] ms^{-1}. **[5]** (a) **momentum** (b) (c) (d)
Ans.**a**
Sol^{n} :
Scope :

(Type:1, Mark:4.00, Ref:14, Unit: 00) ::

Given, Mass of first object (m_1) = 100 g = 0.1 kg

Mass of second object (m_2) = 200 g = 0.2 kg

Velocity of first object (v_1) = 2 ms^{-1}

Velocity of second object (v_2) = 1 ms^{-1}

Momentum just before impact = $m_1v_1 + m_2 v_2$

23 = 0.1 × 2 + 0.2 × 1 kg ms^{-1} .

Velocity of first object after impact = 1.67 ms^{-1}

Let velocity of second object is v.

According to law of conservation of [BLANK1] ,

0.1 × 2 + 0.2 × 1 = 0.1 × 1.67 + 0.2 × v

0.2 + 0.2 = 0.167 + 0.2 v

or 0.2 v = 0.4 = 0.167

0.2 v = 0.233

$v = \frac{0.233}{0.2}$ = $= \frac{2.33}{2}$ =[BLANK2] ms–1. **[5]** (a) **1.165** (b) (c) (d)
Ans.**a**
Sol^{n} :
Scope :