

Multiple choice questions

1. Choose the best alternative of the following questions and write in the answer sheet.

a. Which of the following methods is suitable if one has to study whether the farmers of a region use more chemical organic fertilizers?

- i. Observation**
- ii. Test**
- iii. Research**
- iv. Survey**

Correct answer: iv. Survey

Explanation:

Survey is used to collect information from a large number of people in a region.

b. Which of the following is an advantage of cloud computing?

- i. Cloud migration**
- ii. Global scale**
- iii. IT governance**
- iv. Unexpected costs**

Correct answer: ii. Global scale

Explanation:

Cloud computing allows access to data and services from anywhere in the world.

c. At what condition is the average velocity of body calculated?

- i. Zero acceleration**
- ii. Rest**
- iii. Uniform motion**
- iv. Non-Uniform motion**

Correct answer: iii. Non-Uniform motion

Explanation:

We calculate average velocity in non-uniform motion to represent overall motion.

d. What is the pressure exerted by the water at the depth of 100m where the value of acceleration due to gravity is 9.8m/s^2 ? Density of water is 1000kg/m^3 .

- i. 980 Pa
- ii. 9800 Pa
- iii. 98000 Pa
- iv. 980000 Pa

Correct answer: 980000Pa

$$P = dhg$$

e. Complete the given chemical equation. $\text{CaCO}_3 \rightarrow \text{CaO} + \dots\dots\dots$

- i. CO
- ii. C_2O
- iii. CO_2
- iv. CO_3

Correct answer: iii. CO_2

Explanation:

Calcium carbonate decomposes into calcium oxide and carbon dioxide.

f. Which method should be used to remove the permanent hardness of water?

- i. By Boiling
- ii. Clark's method
- iii. Permutit method
- iv. Using calcium hydroxide

Correct answer: iii. Permutit method

Explanation:

Permanent hardness cannot be removed by boiling; it is removed by the permutit method.

Group B

Very Short Answer Questions

1. Write any one research question.

One research question:

Does the use of chemical fertilizer increase crop production?

2. What is retardation?

Retardation is the decrease in velocity per unit time.

3. Which acid is found in milk?

Lactic acid is found in milk.

4. Neon is also called inert gas, Give reason.

Neon is called an inert gas because its outermost shell is completely filled.

5. Write any two examples of alkali.

Sodium hydroxide and potassium hydroxide.

6. In which era has the given organism evolved? Elephant.

In Cenozoic era given organism evolved.

Group C(Short answer type questions)

1. Compare Artificial Intelligence and Virtual reality in any two points.

Artificial Intelligence (AI)

AI enables machines to think and make decisions like humans.

AI is used in robots and smart systems.

Virtual Reality (VR)

VR creates a virtual, computer-generated environment.

VR is used in gaming, training, and education.

2. What will be the acceleration of vehicle if it started from rest and its velocity reached 12m/s after 4 seconds?

Given:

Initial velocity (u) = 0 m/s

Final velocity (v) = 12 m/s

Time (t) = 4 s

We know,

$$a = (v-u)/t$$

$$a = (12 - 0) / 4$$

$$a = 3\text{m/s}^2$$

The acceleration of the vehicle is **3 m/s²**.

3. Near earth asteroids are dangerous for the earth, Why?

Near-earth asteroids are dangerous because they can **collide with the Earth**, causing **large-scale destruction and environmental damage**.

Group D

1. Study the given figure and answer the following questions

Figure: Printer

a. Identify the given figure.

Printer is the given figure.

b. What is needed to function this device?

Needed to function this device:

Power supply

Ink or toner

Paper

Connection to a computer or device.

c. Mention the methods of using this device.

Methods of using this device:

Connect printer to computer or mobile

Load paper and ink/toner

Send print command from device

Collect printed output

2. An element has its atomic weight 23amu(Sodium)

i. Draw its atomic model.

Draw in your copy.

ii. What is the valency of this element?

The Valency of this element is 1.

iii. Write a balanced chemical reaction between the above given element and chlorine.

Answer:

Balanced chemical reaction with chlorine:

