INTERNATIONAL INDIAN SCHOOL DAMMAM

QUESTION BANK FOR MID-TERM EXAM 23-24

CLASS: IX, SUBJECT: CHEMISTRY

Chapter-1 Matter in our surroundings

I Choose the correct option

1. Dry ice is ----------

a) Water in solid state.
b) Water in gaseous state
c) CO^2 in liquid state
d) CO^2 in solid state

2. Matter is classified on the basis of…….

a) Physical and chemical properties
b) Physical and biological properties
c) Chemical properties
d) Biological and characteristic properties.

3. Temperature increases with……

a) Increasing kinetic energy
b) Increasing temperature
c) Increasing pressure
d) Decreasing pressure

4. The boiling point of three substances is 35ºC, 56ºC, 118ºC. Which is the correct representation in Kelvin scale?

a) 308K 329K 391K
b) 308K 329K 392K
c) 308K 329K 391K
d) 329K 392K 308Ka

5. …….. And..... Gaseous are essential for the survival of aquatic animals and plants.

a) Hydrogen, oxygen
b) Carbon dioxide, nitrogen
c) Oxygen, water
d) Carbon dioxide, oxygen

6. The amount of the heat energy required to change 1kg of solid into liquid at atmospheric pressure at its melting point is known as……

a) Fission of heat
b) Fusion of heat
c) Latent heat of fusion
d) Latent heat of fission

7. A few substances are arranged in the increasing order of 'forces of attraction' between their particles. Which one of the following represents a correct arrangement?
(a) Water, air, wind
(b) Air, sugar, oil
(c) Oxygen, water, sugar
(d) Salt, juice, air

8. The quantity of matter present in an object is called its:
(a)Weight
(b)Gram
(c)Mass
(d)Density

9. The state of matter which consists of super energetic particles in the form of ionized gases is called:
(a)Gaseous state
(b)Liquid state
(c)Bose- Einstein condensate
(d)Plasma state

10. S. I. unit of temperature is:
(a)Celsius
(b)Fahrenheit
(c)Kelvin
(d)None of these

11. Which of the following cannot be considered a form of matter?

(a) Atom
(b) Water
(c) Humidity
(d) Electron

12. Which one of the following set of phenomena would increase on raising the temperature?
(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

13. Which of the following is most suitable for summer?

(a) Cotton
(b) Nylon
(c) Polyester
(d) Silk.

14. Under which of the following conditions we can boil water at room temperature?

(a) At low pressure
(b) At high pressure
(c) At very high pressure
(d) At atmospheric pressure

15. Which of the following does not affect rate of evaporation?

(a) Wind speed
(b) Surface area
(c) Temperature
(d) Insoluble heavy impurities

II. Long Answer type questions

1) When 50 g of sugar is dissolved in 100 mL of water, there is no increase in volume. What characteristic of matter is illustrated by this observation?

2) Convert the following into Kelvin scale:
a) 27 ºC b) 378º C

3) Explain evaporation and its cooling effect in terms of kinetic energy of particles.
Tabulate three differences between boiling and evaporation

4) Why does the temperature of a substance remain constant during its melting point or boiling point?

III. Short Answer type questions

1) Which produce more severe burns boiling water or steam ?

2) Cotton is solid but it floats on water. Why?

3) Name the factors that affect evaporation

4) Camphor disappears without leaving any residue. Explain?

IV. Fill in the blanks:

1. Evaporation of a liquid at room temperature leads to a_____effect.
2. At room temperature, the forces of attraction between the particles of solid substances are___than those which exist in the gaseous state.
3. The arrangement of particles is less ordered in the_____state. However, there is no order in the_____state.
4. _____is the change of gaseous state directly to solid state without going through the state.
5. The phenomenon of the change of a liquid into the gaseous state at any temperature below its boiling point is called____.

V. Give reason for the following:

1) Why does a gas fill completely the vessel in which it is kept?
2) Wet clothes do not dry easily on a rainy day.
3) Ice at 273K is more effective in cooling than water at 273K.

VI. ASSERTION REASON QUESTIONS

.**In the following Questions, the assertion and reason have been put forward. Read the statements carefully and choose the correct alternative from the following:**

(a).) Both assertion and reason are correct and reason is the correct explanation for assertion.

(b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.

(c) Assertion is true but the Reason is false.

(d) The statement of the Assertion is false but the reason is true.

1) Assertion: Compressed natural gas is used as fuel in vehicles.

Reason: CNG is contain natural gas

2) **Assertion:** Particles in steam that is water vapor at 373K have more energy than water at same temperature**.**

Reason: -Particles in steam have absorbed extra energy in the form of latent heat of vaporization

INTERNATIONAL INDIAN SCHOOL DAMMAM
QUESTION BANK FOR MID-TERM EXAM 23-24
CLASS: IX, SUBJECT: CHEMISTRY

CHPATER – 2 IS MATTER AROUND US PUREWORKSHEET

Q1 Choose the correct option :

1. What is the name of the metal which exists in liquid state at room temperature?
(a) Sodium
(b) Potassium
(c) Mercury
(d) Bromine

2. If we put camphor in an open container, its amount keeps on decreasing due to thephenomenon of
(a) Evaporation
(b) Precipitation
(c) Condensation
(d) Sublimation

3. Heterogeneous mixture in which the solute particles do not dissolve and remain suspendedthroughout the solvent and the solute particles can be seen with the naked eye is known as:
(a) Colloidal solution
(b) Super saturated solution
(c) Sublimation
(d) Suspensions

4. In tincture of iodine, find the solute and solvent?
(a) alcohol is the solute and iodine is the solvent
(b) iodine is the solute and alcohol is the solvent
(c) any component can be considered as solute or solvent
(d) tincture of iodine is not a solution

5. A pure substance which is made up of only one kind of atom and cannot be broken into two ormore simpler substances by physical or chemical means is referred to as
(a) compound
(b) an element
(c) a molecule
(d) a mixture

6. The amount of solute present per unit volume or per unit mass of the solution/solvent isknown as
(a) Composition of solute
(b) Concentration of a solvent

(c) Concentration of a solute
(d) Concentration of a solution

7. Rusting of an article made up of iron is called
(a) corrosion and it is a physical as well as chemical change
(b) dissolution and it is a physical change
(c) corrosion and it is a chemical change
(d) dissolution and it is a chemical change

8. Sol and gel are examples of
(a) Solid-solid colloids
(b) Sol is a solid-liquid colloid and gel is liquid solid colloid
(c) Sol is solid-solid colloid and gel is solid-liquid colloid
d) Sol is a liquid-solid colloid and gel is a solid-liquid colloid

9. Cooking of food and digestion of food:
(a) are both physical processes
(b) are both chemical processes
(c) cooking is physical whereas digestion is chemical
(d) cooking is chemical whereas digestion is physical

10. Which of the following properties does not describe a compound?

(a) It is composed of two or more elements
(b) It is a pure substance.
(c) It cannot be separated into constituents by physical means
(d) It is mixed in any proportion by mass

Fill in the blanks

1. If the amount of solute contained in a solution is less than the saturation level , it is calledas__.
2. Properties of a_____are different from its constituent elements, whereas a ___ shows the properties of its constituting elements.
3. A solution is defined as a mixture that is____.

Short answer type questions
Q1. State the difference between pure and impure substances.Q2 What are the two components of a solution.
Q3. What is solubility.
Q4. Differentiate between mixture and compound.

Long Answer type questions
Q1. Define evaporation. Explain the factors that affect its rate.
Q2. A solution contains 40 g of common salt in 320 g of water . Calculate the concentration in terms of mass by mass percentage of the solution.

Q3. Write the properties of solution, suspension and colloid.
Q4. Differentiate between homogenous mixture and heterogenous mixture.Q5. Differentiate between physical change and chemical change.

Assertion - Reasoning based questions.

These consist of two statements – Assertion (A) and Reason (R). Answer these questions selectingthe appropriate option given below:
(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true and R is not the correct explanation of A
(c) A is true but R is false
(d) A is False but R is true

Q.1. Assertion : When a beam of light is passed through a colloidal solution placed in a dark place the path of the beam becomes visible.
Reason : Light gets scattered by the colloidal particles.

Q2. Assertion : A solution of table salt in a glass of water is homogeneous.
Reason : A solution having different composition throughout is homogeneous.

INTERNATIONAL INDIAN SCHOOL DAMMAM

QUESTION BANK FOR MID-TERM EXAM 23-24

CLASS: IX, SUBJECT: PHYSICS

CHAPTER-8 MOTION

CHOOSE THE CORRECT ANSWER

1. An example of a body moving with constant speed but still accelerating is
   (a) A body moving in a helical path with constant speed
   (b) A body moving with constant speed on a straight road
   (c) A body moving with constant speed in a circular path
   d) A body moving with constant speed on a straight railway track

2. An object travels 20 m in 5 sec and then another 40 m in 5 sec. What is the average speed of the object?
   (a) 6 m/s
   (b) 2 m/s
   (c) 12 m/s
   (d) 0 m/s

3. Acceleration is a vector quantity, which indicates that its value
   (a) Can be positive, negative or zero
   (b) Is always positive
   (c) Is always negative
   (d) Is zero

4. Which of the following is most likely not a case of uniform circular motion?
   (a) Motion of the earth around the sun
   (b) Motion of a toy train on a circular track
   (c) Motion of a racing car on a circular track
   (d) Motion of hours' hand on the dial of a clock

5. A man is moving with 36 kmph. The time of reaction is 0.9 seconds. On seeing an obstacle in the path, he applies brakes and decelerates at 5 m/s2, the total distance covered before he stops is:
   (a) 19 m
   (b) 17 m
   (c) 16 m
   (d) 18 m

6. The slope of the distance-time graph is:
   (a) Distance
   (b) acceleration
   (c) Speed
   (d) Displacement

Directions: In each of the following questions, a statement of Assertion is given and a corresponding statement of Reason is given just below it. Of the statements, given below, mark the correct answer as: (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) Both Assertion and Reason are false.

1. **Assertion**: Displacement of an object may be zero even if the distance covered by it is not zero.
   Reason: Displacement is the shortest distance between the initial and final position.

2. **Assertion**: Velocity versus time graph of a particle in uniform motion along a straight path is a line parallel to the time axis.
   Reason: In uniform motion the velocity of a particle increases as the square of the time elapsed.

Fill in the blank

1. A body moving in a straight line has a uniform motion if it travels_____distance in equal time intervals.
2. The device used to measure speed of a car_____
3. When s-t graph is parallel to x-axis, the body is ———-
4. An odometer in a car measure ————
5. Velocity (v) of an object in uniform circular motion is Calculated by_____
6. The curved speed time graph represents_____accelerated motion
7. Tractor moving with 18 km/h is_____then car moving with 1500 m/min

ANSWER THE FOLLOWING

1.A particle moving with an initial velocity of 5m/s is subjected to a uniform acceleration of $2.5 m/s^2$. Find the displacement in the next 4 sec.?

2. An object moves along a circular path of diameter 14cm with constant speed. If it takes 2 min. to move from a point on the path to the diametrically opposite point. Find
(a) The distance covered by the object
(b) The speed
(c) The displacement
(d) average velocity

3. A train accelerated from 20km/hr to 80km/hr in 4 minutes. How much distance does it cover in this period? Assume that the tracks are straight?

4. An artificial satellite is moving in a circular orbit of radius 42250 km. calculate its speed if it takes 24hrs to revolve around the earth.

5. Distinguish between speed and velocity.

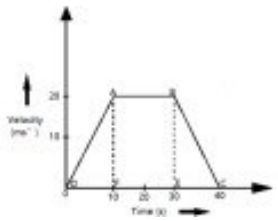
CASE BASED QUESTION

1. Using the following data draw displacement - time graph for a moving object

Time (s)	0	2	4	6	8	10	12	14	16
Displacement (m)	0	2	4	4	4	6	4	2	0

Use this graph to find average velocity for first 4 s, for next 4 s and for last 6 s

2. The velocity -time graph of a body is shown below: (a)State the kind of motion represented by OA and AB. (b)What is the negative acceleration of the body? (c)Find the velocity of the body after 10 s and after 40 s. (d) Find the distance travelled between10th and 30th second.



3. Rajeev went from Delhi to Chandigarh on his motorbike. The odometer of the bike reads4200 Km at the start of the trip and 4460Km at the end of his trip. If Rajeev took 4 h 20 min to complete his trip, find the average speed in Km/hr. as well as m/s.

INTERNATIONAL INDIAN SCHOOL DAMMAM

QUESTION BANK FOR MID-TERM EXAM 23-24

CLASS: IX, SUBJECT: PHYSICS

LESSON 9 - FORCE AND LAWS OF MOTION

Select and write most appropriate option out of the four options given for the each of the questions

1) When a force is exerted on an object,it can change it's
A) State
B) Position
C) Shape
D) All of the above

2) When balanced force act on a body,the body
A) Must retain its state of rest
B) Must continue with uniform velocity,if already in motion
C) Must experience some acceleration
D) Both A&B

3) The S.I unit of force is
A) Kilowatt
B) Newton
C) Watt
D) Joule

4) The inertia of an object tends to cause the object
A) To increase it's speed
B) To decrease it's speed
C) To resist any changes in it's state of motion
D) To decelerate due to friction

5) If A and B are two objects with masses 8 Kg and 32 Kg respectively,then
A) A has more inertia than B
B) B has more inertia than A
C) A and B have the same inertia
D) Neither of the two has inertia

6) The relation between acceleration,mass and force is given by
A) $a \times F = m$
B) $F = m/a$
C) $F \times m = a$
D) $F/m = a$

7 Which among the following is true as per Newton's third law of motion
A) Action and reaction forces are always equal and opposite
B) Action and reaction forces are always perpendicular
C) Action and reaction forces are always unequal
D) Action and reaction forces act in same direction

8) While catching a ball,a player lowers his hands to
   A) Avoid getting hurt
   B) Increase the time to slow down
   C) Decrease the time to slow down
   D) Avoid the breaking of the ball

9) What do we get by the product of mass and velocity?
   A)Force
   B) Inertia
   C) Momentum
   D)Newton

10) When a horse pulls a cart, the force which is responsible for the movement of cart is:
   A)the force of the horse on the cart
   B)the force of the ground on the horse
   C)the force of the ground on the cart
   D)the force of the horse on the ground

Fill in the blanks

1) Newton's first law of motion is also known as…….
2) Linear inertia measures……of the body
3) The people in a bus are pushed backwards when the bus starts suddenly because of……
4) The quantity of motion possessed by the body is called……
5) A body of mass 20 Kg moves with an acceleration of 2m/s . Then the rate of change of momentum in the SI unit is ……

Short Answer Type Questions

1) What are balanced and unbalanced forces?
2) A javelin throw is marked foul if the athlete crosses over the line marked for throw. Explain why an athlete often fails to stop himself before that line?
3) How can Newton's first law be deduced from the second law?
4) A stone of 1 kg is thrown with a velocity of 20 m/s across the frozen surface of a lake and comes to rest after travelling a distance of 50m. What is the force of friction between the stone and the ice?
5) A hammer of mass 500 g moving at 50 m/s , strikes a nail. The nail stops the hammer in a very short time of 0.01 s . What is the force of the nail on the hammer?
6) What is momentum? Write it's SI unit.
7) A motor car of mass 1200kg is moving along a straight line with uniform velocity of 90 km/h. It's velocity is slowed down to 18 km/h in 4 s by an unbalanced force. Calculate the acceleration and change in momentum

Case Based Questions

(1) Newton’s first law of motion states that a body at rest will remain at rest position only and a body which is in motion continues to be in motion unless otherwise they are acted upon by an external force. In other words, all objects resist a change in their state of motion. In a qualitative way, the tendency of undisturbed objects to stay at rest or to keep moving with the same velocity is called inertia. This is why the first law of motion is also known as the law of inertia. Answer the

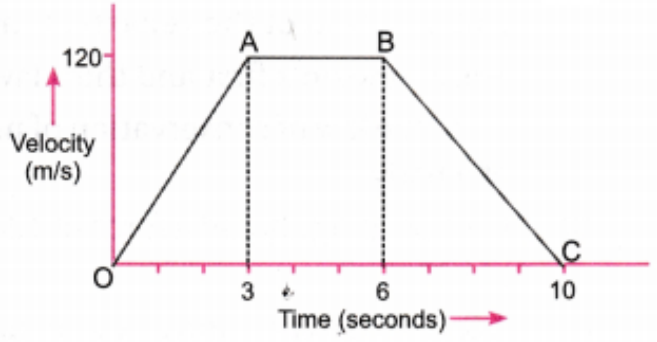
following questions.

i) The first law of motion is also known as ……

(ii)State Newton's first law of motion.

(iii)why Newton's first law of motion is called law of inertia

(2) The velocity-time graph of an object of mass m = 50 g is shown in figure. Observe the graph carefully and answer the following questions.
(a) Calculate the force on the object in time interval 0 to 3 s.
(b) Calculate the force on the object in the time interval 6 to 10 s.
(c) Is there any time interval in which no force acts on the object? Justify your answer.



Assertion - Reasoning based questions.

These consist of two statements - Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below
(a) Both the Assertion and Reason are correct and the Reason is the correct explanation of the Assertion.
(b) The Assertion and the Reason are correct but the reason is not the correct explanation of the Assertion.
(c) Assertion is true but the Reason is false.
(d) The statement of the Assertion is false but the Reason is true.

1) Assertion: The recoil velocity of gun is much less than that of bullet
   Reason: Less force due to the bullet is exerted on the gun than that exerted by gun on the bullet

2) Assertion: A bicycle has to be pedaled again and again to keep it moving with uniform velocity.
   Reason: Force is applied on the bicycle to balance the force of friction exerted by the ground on the bicycle .

INTERNATIONAL INDIAN SCHOOL, DAMMAM

CLASS 9 CHAPTER 12 SOUND WORKSHEET 2023-24

1.Two sounds of same pitch and loudness differ in their
(a) tone

(b) note
(c) quality
(d) frequency

2. Sound travels in air if
(a) particles of medium travel from one place to another
(b) there is no moisture in the atmosphere
(c) disturbance moves
(d) both particles as well as disturbance travel from one place to another.

3. Earthquake produces which kind of sound before the main shock wave begins
(a) ultrasound
(b) infrasound
(c) audible sound
(d) none of the above

4. Infrasound can be heard by
(a) dog
(b) bat
(c) rhinoceros
(d) human beings

5. Note is a sound
(a) of mixture of several frequencies
(b) of mixture of two frequencies only
(c) of a single frequency
(d) always unpleasant to listen

6. **Sound can be transferred through**

a) Solid

b) Liquid

c) Gases

d) All of these

7. **The SI unit of wavelength is —**

a) Hertz

b) second

c) Meter

d) Both a) and b)

8. **Loudness or softness of a sound is depend on**

a) Amplitude

b) Frequency

c) Type of a wave

d) None of these

9. **Horns of the vehicles are based on the principle of**

a) Echo

b) Multiple reflections of sound

c) Ultrasound waves

d) None of these

10. **The speed of sound is greater in**

a)copper

b) Ethanol

c) Air

d) Sulphur dioxide

11. **Rhinoceroses communicate using**

a) Ultrasound waves

b) Infrasound waves

c) Audible sound waves

d) All of the above

12. **The frequency of ultrasound waves is**

a) Less than audible sound waves

b) Greater than audible sound waves

c) Equal to or less than sound waves

d) None of these

ANSWER THE FOLLOWING QUESTIONS

1. Define frequency. What is its symbol and its SI unit?

2. What is Echocardiography?

3. Mention one advantage and one disadvantage of reverberation.

4 .How does a megaphone works?

5. If the velocity of sound in air is 346 ms^{-1}. Calculate
   1. Wavelength when the frequency is 246 Hz.
   2. frequency when the wavelength is 0.65 m.

6. State three applications of reflection of sound.

7. What is reverberation? How can it be reduced?

8. A hospital uses an ultrasonic scanner to locate tumours in a tissue. What is the wavelength of sound in a tissue in which the speed of sound is 1.7km/s. The operating frequency of the scanner is 4.2MHz (1MHz=10^6Hz)

9.(a) Draw a diagram depicting soft sound and a loud sound. What is the main difference between the two?

(b) Why are ceilings of concert halls and conference halls made curved?Explain with a diagram.

10.Explain how ultrasound is used to clean spiral tubes and electronic components.

Assertion and Reason Questions

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice.

Q.1. Assertion : Two persons on the surface of moon cannot talk to each other.
Reason : There is no atmosphere on moon.

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A)

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(c) Assertion (A) is true but reason (R) is false.

(d) Assertion (A) is false but reason (R) is true.

Q.2. Assertion : Compression and rarefaction involve changes in density and pressure.
Reason : When particles are compressed, density of medium increases and when they are rarefied, density of medium decreases.

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A)

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

INTERNATIONAL INDIAN SCHOOL, DAMMAM 2022-23

CLASS 9 CHAPTER-4 STRUCTURE OF ATOM

WORKSHEET

CHOOSE THE CORRECT ANSWER

1. Which of the following isotope is used in the treatment of blood cancer?
   (a) P-32
   (b) I-131
   (c) Co-60
   (d) any of these

2. The charge on an electron is equal to:
   (a) 1.6×10^{-19} C of -ve charge
   (b) 2.6×10^{-19} C of -ve charge
   (c) 1.6×10^{-22} C of -ve charge
   (d) 1.6×10^{-23} C of -ve charge

3. The electronic configuration of Cl- ion is

   (a) 2,8,7 (b)2,8,8 (c)2,8,6 (d) 2,8,8,1

4. Isotopes of an element have

   (a) same physical properties

   (b) different chemical properties

   (c) different number of neutrons

   (d) different atomic numbers

5. An element has electronic configuration 2,8,4. It will be classified as

   (a) metal (b) non metal (c) metalloid (d) noble gas

6. Cathode rays have

   (a) charge only (b) mass only (c) charge as well as mass

   (d) neither charge nor mass

7. Atomic number is equal to

   (a) number of electrons (b) number of protons (c) number of neutrons
   (d) difference in mass number and number of electrons

8. Elements with valency 1 are

(a) always metals (b) always metalloids (c) either metals or non-metals (d) always non metals

9.The first model of an atom was given by

(a) N.Bohr (b) E.Goldstein (c)Rutherford (d) J J Thomson

10. An atom with 3 protons and 4 neutrons will have a valency of

(a) 3 (b) 7 (c) 1 (d) 4

11. Which subatomic particle is absent in an ordinary hydrogen atom?.

12. J. Chadwick discovered a subatomic particle which has no charge and has mass nearly equal to that of a proton. Name the particle and give its location in the atom.

13.What is the maximum number of electrons which can be accommodated in 'N' shell?.

14.Which isotope of hydrogen is present in heavy water?

15. Write the correct representation of an element 'X' which contains 15 electrons and sixteen neutrons.

ANSWER THE FOLLOWING

1.Name the three subatomic particle of an atom.

2. If the number of electrons in an atom is 8 and number of protons is also 8,

(1) What is the atomic number of the atom?

(2) What is the charge on the atom?

3. Write the electronic configuration of any one pair of isotopes and isobars.

4 .Compare the properties of electrons, protons & neutrons.

5. If z=3, what would be the valency of the element? Name the element.

6. (a) What is the similarity in the electronic structure of the following set of atoms?

(a) lithium (b) sodium (c) potassium

(b) Which of the above element is most reactive and why?

7. (a)Explain Bohr and Bury rules for distribution of electrons into different shells.

(b) Draw the electronic structure of element X with atomic number 17 and element Y with atomic number 16.

8. Give reasons

(a) Mass number of an atom excludes the mass number of an electron.

(b) Nucleus of an atom is charged.

(c) Alpha particle scattering experiment was possible by using gold foil only and not by foil of any other metal.

Assertion and Reason Questions

1)ASSERTION-Fluorine have one valency.

REASON-Seven electrons revolved around the fluorine atom.

a) Both Assertion and Reason are correct, and reason is the correct explanation for assertion.

b) Both Assertion and Reason are correct, and Reason is not the correct explanation for Assertion.

c) Assertion is true but Reason is false.

d) Both Assertion and Reason are false

2) ASSERTION-The sum of proton no. and neutron no. gives us atomic mass number of atom.

REASON-Proton no. and neutron no. is always same.

a) Both Assertion and Reason are correct, and reason is the correct explanation for assertion.

b) Both Assertion and Reason are correct, and Reason is not the correct explanation for Assertion.

c) Assertion is true but Reason is false.

d) Both Assertion and Reason are false.

INTERNATIONAL INDIAN SCHOOL DAMMAM
WORKSHEET
CLASS: IX SUBJECT: SCIENCE
Chapter-3 ATOMS AND MOLECULES

Choose the correct option

Q1. Which among the following is not a postulate of Daltons atomic theory?
a. Atoms can not be created or destroyed
b. Atoms of different elements have different sizes, masses and chemical properties
c. Atoms of same elements can combine in only one ratio to produce more than any one compound
d. Atoms are very tiny particles which can not be further divided

Q2.The formula of ethanol is $C_2H_5 – OH$. What will be its molecular mass?
a. 46 u
b. 34 u
c. 34 g
d. 46 g

Q3.How many oxygen atoms are there in $2Fe_2O_3$?
(a) 6 Oxygen atoms. (b)5 Oxygen atoms
(b) 4 Oxygen atoms. (d)3 Oxygen atoms

Q4.How many elements are there in $C_6H_{12}O_6$?
(a) 1. (b)2
c) 3. (d) 4

Q5. Group of two or more atoms called……..
a) Elements
b) Molecules
c) Complex
d) None of the above

Q6. The number of atoms constituting a molecule is known as its……
a) Molecular weight
b) Atomic number
c) Atomicity
d) Molecule

Q7.. Which is the polyatomic ions from below option
a) Hydrogen
b) Oxygen
c) Argon

d) Ammonium

Q8. Choose the correctly written molecule
a) OH2
b) OC
c) OCa
d) Mg(OH)2

Q9.18g of water is electrolysed. The weight of oxygen formed will be
(a) 16g. (b)8g
c)4g. (d)2g
Q10.Which of the following is octa -atomic?
(a) Sulphur. (b) Oxygen
c)Ozone. (d) Phosphorous

SHORT ANSWER TYPE QUESTIONS

Q1. Write down the formulae of
(i) Zinc hydroxide.
(ii) Aluminum chloride
(iii) Sodium sulphide
(iv) Manganese dioxide

Q2. Write down the names of compounds represented by the following formulae:
(i) Al2(SO4)3 (ii) CaCl2 (iii) K2SO4 (iv) KNO3

Q3.An element X has valency 3.Write the formula of its oxide.

Q4.Give an example of (a)triatomic (b)polyatomic molecule of elements.

Q5.Name the cation and anion which constitue the molecule of Magnesium cholride.

Q6.Give the names of the elements present in the following compounds and calculate the molecular mass for each one of them.
(a) Quick lime (b) caustic potash
(c) Baking powder (d)Common salt
(e) Caustic soda. (f) Lime stone

LONG ANSWER TYPE QUESTIONS

Q1.What is Law of conservation of mass and Law of constant proportions?

Q2..Define the term valency. What is the valency for magnesium and copper?

Q3.Define the atomic mass unit.

Q4.What is atomicity? What is the atomicity of phosphorus and nitrogen?

Q5.An element X forms an oxide with fomula X_2O_3

(a) state the valencey of X
(b) Write the formula of
i)chloride of X. ii) Sulphate of X

Q6.State the postulates of Daltons atomic theory.

ASSERTION AND REASONING BASED QUESTIONS

These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting
the appropriate option given below:
(a) Both A and R are true and R is the correct explanation of A
(b) Both A and R are true and R is not the correct explanation of A
(c) A is true but R is false
(d) A is False but R is true

Q1. Assertion : Pure water obtained from different sources such as river, well, spring, sea etc. always contains hydrogen and oxygen combined in the ratio of 1 : 8 by mass.
Reason : A chemical compound always contains same elements combined in same fixed proportion by mass.

Q 2. Assertion : Atomic mass of aluminum is 27.
Reason : An atom of aluminum is 27 times heavier than 1/12th of the mass of carbon-12 atom.

Q.3 Assertion : A molecule is the smallest particle of an element or a compound which is capable
of free existence.
Reason : The number of atoms present in one molecule of the substance is called its atomicity

INTERNATIONAL INDIAN SCHOOL DAMMAM
CLASS-9 WORKSHEET
CHAPTER-10 GRAVITATION

1.If the gravitational attraction of the Earth suddenly disappears, which of the following statements will be true?
(a) The weight of the body will become zero but the mass will remain the same.
(b) The weight of a body will remain the same but the mass will become zero.
(c) Both mass and weight become zero.
(d) Neither mass nor weight becomes zero.

2. The force of attraction between two unit point masses separated by a unit distance is called
(a) gravitational potential
(b) acceleration due to gravity
(c) gravitational field
(d) universal gravitational constant

3. The value of acceleration due to gravity
(a) is same on equator and poles
(b) is least on poles
(c) is least on equator
(d) increases from pole to equator

4. The gravitational force between two objects is F. If masses of both objects are halved without changing the distance between them, then the gravitational force would become
(a) F/4
(b) F/2
(c) F
(d) 2F
5. A boy is whirling a stone tied to a string in a horizontal circular path. If the string breaks, the stone
(a) will continue to move in the circular path
(b) will move along a straight line towards the centre of the circular path
(c) will move along a straight line tangential to the circular path
(d) will move along a straight line perpendicular to the circular path away from the boy

6. When the density of a substance is less than the liquid in which it is immersed then the substance
(a) floats

(b) sinks
(c) can't say
(d) none of these

7. A sharp edge blade is more effective in cutting than a blunt blade due to
(a)low force
(b) low pressure
(c) large contact area
(d) small contact area

8. It is easy to swim in sea water than in river. It is because
(a) the sea is deeper than a river
(b) the sea is wider than a river
(c) the density of sea water is greater than river water
(d) the density of sea water is less than river water.

9 An object weighs 10 N in air. When immersed fully in water it weighs only 8 N. The weight of the liquid displaced by the object will be:
(a) 2 N
(b) 8 N
(c) 10 N
(d) 12 N

10. An empty closed drum and a filled drum of same dimension will bring:
(a) same upthrust
(b) same volume
(c) both (a) and (b)
(d)neither (a) nor (b)

Fill in the blanks:

1.The weight of an object at the center of the Earth of radius R is_____.
2. …… of a body is the quantity of matter contained in it.
3. The acceleration due to gravity of the moon is …… of that of the Earth.
4. Weight of an object is the force with which it is attracted towards the ……
5. The force acting on an object perpendicular to the surface is called…….

ANSWER THE FOLLOWING QUESTIONS

1. How is gravitation different from gravity?

2. A stone is dropped from the edge of a roof.
(a)How long does it take to fall 4.9m?
(b)How fast does it move at the end of that fall?
(c)What will be its acceleration after 1 second and after 2 second?

3. Mona weighs 750N on Earth.
   (a) On the planet Mars, the force of gravity is 38% of that of Earth. How much will Mona weigh on Mars?
   (b) What will be Mona's mass on Earth (g=10 m/s^2)?

4. (a)A person weighs 110.84N on moon surface, whose acceleration due to gravity is ⅙ of that earth. If the value of g on earth is 9.8m/s^2,calculate the(i) g on the moon(ii) mass of person on the moon (iii) weight of person on the earth.
(b) How does the value of g on the earth relate to the mass of the earth and its radius? Derive it.

5. Why does a truck or a bus has much wider tyres?

6. Give reasons of the following:
(i) Cutting and piercing tools are made sharp.
(ii) An egg sinks in fresh water but floats in highly salty water.

7. Describe thrust and write its SI unit. Name one factor on which the effect of thrust depend.

8. Lactometers are used to determine the purity of a sample of milk. On which principle is this instrument based? State the principle

9. Define pressure and state its SI unit. The dimension of a metallic cuboid are 30cm * 20 cm * 15 cm and it's mass is 30 kg. If the acceleration due to gravity be 10 m/s2, calculate the pressure exerted by the cuboid when it is resting on the face having 20 cm * 15 cm on a table.

10. What is meant by buoyancy? Why does an object sink or float when placed on the surface of a liquid?

11. State Archimedes principle. How will you verify it experimentally?

1. **Assertion :** A feather and stone dropped from a height reach the ground at different times.
Reason : Acceleration due to gravity acting on a body is directly proportional to its mass.
2. **Assertion:** A piece of cork pressed into water comes back to surface once released.
Reason: When a solid is immersed in a fluid,it experience a buoyant force
3 Assertion: Nobody can sink in the Dead Sea.
Reason : The upthrust exerted by the fluid is independent of the volume of the immersed body.

INTERNATIONAL INDIAN SCHOOL, DAMMAM
WORK SHEET FOR CHAPTER 11- WORK, ENERGY AND POWER

Choose the correct answer-

1) **Which one of the following is not the unit of energy?**
   a) Joule b) Newton meter c) Kilowatt d) Kilowatt hour

2) **Expression for power of an object is equal to:**
   a) Power = work done x time b) Power = time/ work done
   c) Power= work done/ time d) Power= force x displacement

3) **The work done is positive if**

(a) The body shows displacement in the opposite direction of the force applied.
(b) The body shows displacement in the same direction as that of the force applied.
(c) The body shows a displacement in perpendicular direction to the force applied.
(d) The body masses obliquely to the direction of the force applied.

4) **If the velocity of a body is doubled its kinetic energy –**

(a) gets doubled (b) becomes half (c) does not change (d) becomes 4 times

5) **How much time will be required to perform 520 J of work at the rate of 20 W?**

(a) 24s (b) 16s (c) 20 s (d) 26 s

6) **One unit of electrical energy is equal to**

(a) 3.6×10^5J (b) 3.6×10^6J (c) 36×10^5J (d) both (b) and (c)

7) **The energy possessed by an oscillating pendulum of a clock is**

(a) kinetic energy (b) potential energy
(c) restoring energy. (d) mechanical energy

8) A ball is dropped from a height of 10 m.

(a) Its potential energy increases and kinetic energy decreases during the falls

(b) Its potential energy is equal to the kinetic energy during the fall.

(c) The potential energy decreases and the kinetic energy increases during the fall.

(d) The potential energy is minimum and kinetic energy is maximum while it is falling.

9) A car is accelerated on a levelled road and attains a velocity 4 times of its initial velocity. In this process the potential energy of the car

(a) does not change

(b) becomes twice to that of initial

(c) becomes 4 times that of initial

(d) becomes 16 times that of initial

10. In case of negative work the angle between the force and displacement is

(a) 0°

(b) 45°

(c) 90°

(d) 180°

11) S I unit of work is _____

12. The expression of work done is _____.

13. Commercial unit of energy is _____

14. A stretched bow possesses _____energy.

15. Work done on an object would be ____if the displacement of the body is perpendicular to the applied force.

17. Energy is a _____quantity.

18. The work done in holding 15 kg suitcase while waiting for a bus for 15 minute is _____

Q. no. 19 & 20 are assertion- reasoning based questions.

These consist of two statements- Assertion (A) and Reason (R). Answer these questions selecting the appropriate options given below:

a) Both Assertion and Reason are correct, and Reason is the correct explanation for Assertion.

b) Both Assertion and Reason are correct, and Reason is not the correct explanation for Assertion.

c) Assertion is true but Reason is false.

d) Both Assertion and Reason are

false. 19 Assertion-the unit of work is

Nm

Reason-Nm is the SI unit of work where N is used for Newton.

20. Assertion: A spring has potential energy, both when it is compressed or stretched.
Reason: In compressing or stretching, work is done on the spring against the restoring force.

Answer the following-

21. Define a) S.I unit of work
b) 1kWh
c) S.I unit of power
d) kinetic energy
e) gravitational potential energy

22. State law of conservation of energy.

23. Mention the conditions when work done becomes zero.

24. Derive an expression for kinetic energy.

25. Express the relation between S.I unit of energy and commercial unit of energy.