winmeen.com

1 MARK, 2 MARK QUESTIONS

9th Std Science
First Term

9th Std Science – 1st Term

1.MEASURMENT AND MEASURING INSTRUMENTS

I. Multiple choice Questions:

1. Choose the correct one

a) mm < cm < m < km b) mm > cm > m > km

c) km < m < cm < mm d) mm > m > cm > km

2. Rulers, measuring tapes and metre scales are used to measure

a) Mass b) Weight

c) Time **d) Length**

3. 1 metric ton is equal to

a) 100 quintals **b) 10 quintals**

c) 1/10 quintals d) 1/100 quintals

4. Distance between Chennai and Kanyakumari can be found in

a) Kilometres b) Metres

c) Centimetres d) Millimetres

5. Which among the following is not a device to measure mass?

a) Spring balance b) Beam balance

c) Physical balance d) Digital Balance

II. Fill in the blanks:

1. Metre is the unit of **Length**
2. 1 Kg of rice is weighted by **Common Beam balance**
3. The thickness of a cricket ball is measured by **Vernier caliper**
4. The radius of a thin wire is measured by **Screw gauge**
5. A physical balance measures small differences in mass up to **1 Milligram**

III. True or False

1. The SI unit of electric current is kilogram. - **False**
2. Kilometre is one of the SI units of measurement. - **False**
3. In everyday life, we use the term weight instead of mass. - **True**

4. A physical balance is more sensitive than a beam balance as it can accurately measure even a very small mass, even milligram. - **True**

5. One Celsius degree is an interval of 1k and zero degrees Celsius is 273.15k. - **True**

IV. Match the following:

1.

Column I	**Column II**
i) Length	a) Kelvin
ii) Mass	b) metre
iii) Time	c) Kilogram
iv) Temperature	d) Second

Ans: i – b; ii – c; iii – d; iv - a

2.

Column I	**Column II**
i) Screw guage	a) Vegetables
ii) Vernier caliper	b) Coins
iii) Beam balance	c) Gold ornaments
iv) Digital balance	d) Cricket ball

Ans: i – b; ii – d; iii – a; iv – c

3.

Column I	**Column II**
i) Temperature	a) Beam balance
ii) Mass	b) Ruler
iii) Length	c) Digital clock
iv) Time	d) Thermometre

Ans: i – d; ii – a; iii – b; iv – c

V. Assertion and reason type:

1. **Assertion (A) :** The SI Systems of units is the improved system of units for measurement.

Reason (s): The SI unit of mass is kilogram.

a) Both A and R are true but R is not the correct reason.

b) Both A and R are true and R is the correct reason.

c) A is true but R is false.

d) A is false but R is true

2. **Assertion (A) :** The skill of estimation is important for all of us in our daily life.

Reason (s): The skill of estimation reduces our consumption of time.

a) Both A and R are true but R is not the correct reason.

b) Both A and R are true and R is the correct reason.

c) A is true but R is false.

d) A is false but R is true

3. **Assertion (A) :** The scientifically correct expression is "The mass of the bag is 10kg"

Reason (s): In everyday life, we use the term weight instead of mass.

a) Both A and R are true but R is not the correct reason.

b) Both A and R are true and R is the correct reason.

c) A is true but R is false.

d) A is false but R is true

4. **Assertion (A) :** $0^{o}c = 273.16K$. For our convenience we take $^{o}c = 273K$ after rounding off the decimal.

Reason (s): To convert a temperature on the Celsius scale you have to add 273 to the given temperature.

a) Both A and R are true but R is not the correct reason.

b) Both A and R are true and R is the correct reason.

c) A is true but R is false.

d) A is false but R is true

5. **Assertion (A) :** The distance between two celestial bodies is measured in the unit of light year.

Reason (s): The distance travelled by the light in one year is one light year.

a) Both A and R are true but R is not the correct reason.

b) Both A and R are true and R is the correct reason.

c) A is true but R is false.

d) A is false but R is true

VI. Comprehensive Type:

Read the passage and answer the questions given below:

Mass is the amount of matter contained in an object. Measurement of mass helps us to distinguish between lighter and a heavier body. Bean balance, spring balance and electronic balance are used to measure mass of different objects. The SI unit of mass is the kilogram (kg). But different units are used to measure the mass of different objects depending upon their weight. E.g. Weight (mass) of a table is measured in milligrams (mg), weight of a student is measured in kilogram (kg) and weight of a truck with goods I measured in metric tons. 1 metric ton is equal to 10 quintals and 1 quintal is equal to 100kg. 1 gram is equal to 1000mg.

1. Value of 1 metric ton is equal to

a) 1000kg b) 10 quintals c) 1000,000g d) 100kg

Ans: a, b and c are true

2. How will you measure weight of a table?

a) kg b) g c) mg d) None of these

Ans: c) mg

VII. Very short answer type:

1. Define measurement.

Measurement is the assignment of a number to a characteristic of an object or event which can be compared with other objects or events.

2. Define standard unit.

SI system of units is the modified and improved form of the previous system of units. It is accepted in almost all the countries of the world.

3. What is the full form of SI System?

SI System: International System of units.

4. Define least count of any device.

The smallest length which can be measured by device is called least count.

5. What do you know about pitch of screw gauge?

The pitch of the screw is the distance between two successive screw threads. It is also equal to the distance travelled by the tip of the screw for one complete rotation of the head.

6. **Can you find the diameter of a thin wire of length 2m using the ruler from your instrument box?**

Ans: Yes

Take the wire and wind it around the pencil. Count the number of turns. Now we compress the wire and measure the length of the turns against the ruler.

$$\text{Diameter} = \frac{\text{Length of the turns}}{\text{No. of turns}}$$

7. Differentiate mass and weight

Mass	Weight
Fundamental quantity	Derived quantity
Has magnitude alone – scalar quantity	Has magnitude and direction vector quantity
It is the amount of matter contained in body	It is the normal force exerted by the surface on the object against gravitational pull
Remains the same	Varies from place to place

8. What is the measuring unit of the thickness of a plastic carry bag?

The Measuring unit of thickness of a plastic carry bag is micron.

One micron = 10^{-6} m

9. Write the need of a standard unit

Many of the ancient system of measurement were based on the dimensions of human body. As a result, unit of measurement varied from person to person and also from location to location.

So we need of a standard unit.

10. How will you measure the least count of vernier caliper?

$$(LC) = \frac{\text{Value of one smallest main scale division}}{\text{Total number of vernier scale division}}$$

$\therefore$ LC = $\frac{1mm}{10}$ =0.1mm or =0.01 cm

2.MOTION

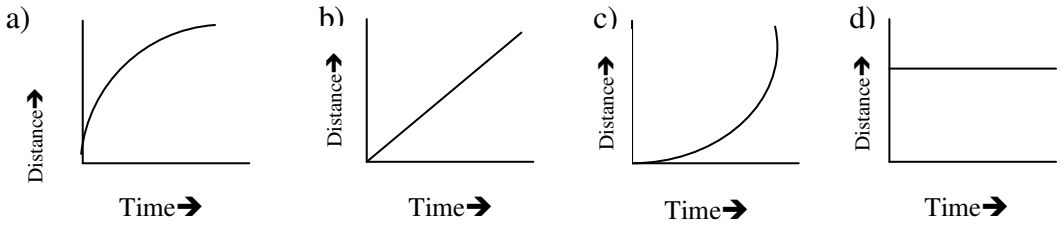
I. Multiple choice questions:

1. Slope of the velocity – time graph – gives

a) Speed b) Displacement

c) Distance **d) Acceleration**

2. Which of the following graph represents uniform motion of a moving particle?



Ans: b

3.A body moving with an initial velocity $5ms^{-1}$ and accelerates at $2ms^{-1}$. Its velocity after 10s is

a) $20ms^{-1}$ **b) $25ms^{-1}$**

c) $5ms^{-1}$ d) $22.55ms^{-1}$

4. In a 100m race, the winner takes 10s to reach the finishing point. The average speed of the winner is

a) $5ms^{-1}$ b) $20ms^{-1}$

c) $40ms^{-1}$ **d) $10ms^{-1}$**

5. The area under velocity – time graph represents

a) Velocity of the moving object. **b) Displacement covered by the moving object**

c) Speed of the moving object d) Acceleration of the moving object

6. A car is being driven at a speed of $20ms^{-1}$ when brakes are applied to bring it to rest in 5s. the deceleration produced in this case will be

a) $+4ms^{-2}$ b) $-4ms^{-2}$

c) $-0.2ms^{-2}$ d) $+0.25ms^{-2}$

7. Unit of acceleration is

a) ms^{-7} **b) ms^{-2}**

c) ms d) ms^{2}

8. Which one 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 the clock.

9. The force responsible for drying of clothes in a washing machine is

a) Centripetal force **b) Centrifugal force**

c) Gravitational force d) Electro static force

10. The centrifugal force is

a) Real force b) The force of reaction of centripetal force

c) Virtual force d) Directed towards the centre of the circular path.

11. When a body starts from rest the acceleration of the body after 2 second is …… Of its displacement.

a) Half b) Twice

c) Four times d) Once fourth

12. In a 100m race, the winner takes 10s to reach the finishing point. The average speed of the winner is …… ms^{-1}

a) 5 **b) 10**

c) 20 d) 40

II. Fill in the blanks

1. Speed is a **Scalar** quantity whereas velocity is a **Vector** quantity.

2. The slope of the distance – time graph at any point gives **Speed**

3. Consider an object is rest at position x = 20m, Then its displacement - time graph will be straight line to **Parallel**

4. Negative acceleration is called **retardation** (or) **deceleration**

5. Area under velocity – time graph shows **the distance** (or) **magnitude of displacement**

III. True of False

1. The motion of a city bus in a heavy traffic road is an example for uniform motion. - **False**

2. Acceleration can get negative value also.- **True**

3. Distance covered by a particle never becomes zero between any interval of time bur displacement becomes zero. - **True**

4. The velocity – time graph of a particle falling freely under gravity would be straight line parallel to the x axis. - **False**

5. If the velocity – time graph of a particle is a straight line inclined to time axis then its displacement - time graph will be a straight line? - **True**

IV. Assertion and Reason Type question

Make the correct choice as:

a) If both assertion and reason are true and reason is the correct explanation of assertion.

b) If both assertion and reason are true but reason is not the correct explanation of assertion.

c) If assertion is true but reason is false.

d) If assertion is false but reason is true.

1. **Assertion:** The accelerated motion of an object may be due to change in magnitude of velocity or direction or both of them.

Reason: Acceleration can be produced only by change in magnitude of the velocity it does not depend on the direction.

Ans: c) If assertion is true but reason is false.

2. Assertion: The speedometer of a car or a motor-cycle measured the average speed of it

Reason: Average velocity is equal to total displacement divided by total time taken.

Ans: b) If both assertion and reason are true but reason is not the correct explanation of assertion.

3. Assertion: Displacement of a body may be zero when distance travelled by it is not zero.

Reason: The displacement is the shortest distance between initial and final position.

Ans: a) If both assertion and reason are true and reason is the correct explanation of assertion

V. Choose correct statement

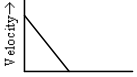
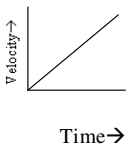
a. Action and reaction forces act on same object

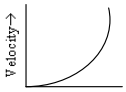
b. Action and reaction forces act on different objects

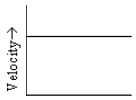
c. Both (a) and (b) are possible

d. Neither (a) nor (b) is correct

V. Match the following

List 1	**List 2**
1. Motion of a body covering equal distances in equal interval of time.	A 
2. Motion with non uniform Acceleration.	B 

3. Constant retardation. C 

4. Uniform acceleration. D 

Ans: 1- D; 2 – C; 3 –A; 4 -B

VI. Short questions & answers:

1. Define velocity?

Velocity is the rate of change of displacement. It is the displacement in unit time.

2. Distinguish distance and displacement?

Distance	Displacement
i) The actual length of the path travelled by a moving body irrespective of the direction.	i) The change in position of a moving body in a particular direction.
ii) It is a scalar quantity.	ii) It is vector quantity.

3. What do you mean by uniform motion?

An object is said to be in uniform motion if it covers equal distance in equal intervals of time how so ever bit or small these time intervals may be. A particle is in uniform motion when it moves with constant velocity.

4. Compare speed and velocity?

Speed	Velocity
i) The rate of change of distance (or) the distance travelled in unit time.	i) The rate of change of displacement in unit time.
ii) It is a scalar quantity	ii) It is vector quantity.

5. What do you understand about negative acceleration?

i) If final velocity is less than initial velocity, the velocity decreases with time and the value of acceleration is negative. It is called negative acceleration.

ii) Negative acceleration is called retardation (or) deceleration.

6. What remains constant in uniform circular motion? And what changes is continuously in uniform circular motion?

i) Object is moving with a constant speed along a circular path.

ii) The direction changes continuously in uniform circular motion.

7. Is the uniform circular motion accelerated? Give reasons for your answer?

Yes, the uniform circular motion is accelerated.

A body is said to be accelerated if the velocity of the body changes either in magnitude (or) in direction. But in the case, the change in velocity is only due to the change in direction.

8. What is meant by uniform circular motion? Give two examples of uniform circular motion.

When an object moves with constant speed along a circular path, the motion is called uniform circular motion.

Examples: 1) Revolution of earth around the sun.

2) Revolution of moon around the earth.

3) In an atom, an electron moves around the nucleus in a circular path.

9. Why did the actual speed differ from average speed?

(i) Actual speed is the distance travelled in particular time.

(ii) Average speed is the ratio of total distance traveled by the body and total time taken.

10. Mention the uses of velocity – time graph

(i) It is used to find the acceleration from the slope of the velocity time graph

(ii) The area under the velocity – time graph is equal to the magnitude of the displacement.

11. The speed of a particle is constant. Will it have acceleration? Justify with an example

The speed of the particle is constant, the body does not accelerate.

i.e acceleration = $\frac{Final\ speed - inital\ speed}{time}$

i.e acceleration = zero

12. Complete the following Sentences.

a) The acceleration of the body that moves with a uniform velocity will be **Zero**

b) A train travels from A to station B with a velocity of 100km/h and returns from station B to station A with a velocity of 80km/h. its average velocity during the whole journey in **10km/hr** and its average speed is **90km/hr.**

3.LIGHT

I. Multiple choice questions:

1. The field of view is maximum for ……..

a) Plane mirror b) Concave mirror **c) Convex mirror**

(*FOV is the extent of the observable area that is seen at any given instant)

2. When a ray of light passes from one medium to another medium, refraction takes place when angle of incidence is.

a) 0^o **b) 45^o** c) 90^o

3……..is used as reflectors in torchlight.

a) Concave mirror b) Convex mirror c) Plane mirror

4. We can create enlarged, virtual images with

a) Concave mirror b) Convex mirror c) Plane mirror

5. When the reflection surface is curved outwards the mirror formed will be

a) Concave mirror **b) Convex mirror** c) Place mirror

6. The focal length of a concave mirror is 5cm. its radius of curvature is

a) 5cm **b) 10cm** c) 2.5cm

7. When a beam of white light passes through a prism it gets

a) reflected **b) Deviated and dispersed** c) Only deviated

8. The speed of light is maximum in

a) Vacuum b) Glass c) Diamond

9. A real and enlarged image can be obtained by using a

a) Convex mirror b) Plane mirror **c) Concave mirror**

10. Which of the following statements about total internal reflection is true?

a) Angle of incidence should be greater than critical angle.

b) Light must travel from a medium of higher refractive index to a medium of lower refractive index.

c) Both (a) and (b)

II. True or false – if false give the correct answer

1. The angle of deviation depends on the refractive index of the glass. - **True**

2. If a ray of light passes obliquely from one medium to another, it does not suffer any deviation.

Ans: False. Due to the density of different medium the ray of light does not posses oblique.

3. IF the object is at infinity in form of a convex mirror the image is formed at infinity.

Ans: False. The image is at F.

4. An object is placed at a distance of 3cm from a plane mirror. The distance of the object and image is 3cm.

Ans: False. The distance of the object and image is 6cm.

5. The convex mirror always produces a virtual, diminished and erect image of the object.

Ans: True

6. The distance from centre of curvature of the mirror to the pole is called the focal length of the mirror.

Ans: False. The distance between pole and focus of a spherical mirror is called its focal length.

7. When an object is at the centre of curvature of concave mirror the image formed will be virtual and erect.

Ans: False. Real, inverted, equal in size at C.

8. Light is one of the slowest travelling energy with a speed of $3x10^8 ms^{-1}$

Ans: False. Fastest travelling energy with a speed of $3x10^8 ms^{-1}$

9. The angle of incidence at which the angle of refraction is 0^o is called the critical angle.

Ans: False. Angle of refraction is 90^o

10. The reason for brilliance of diamonds is mainly due to total internal reflection of light.

Ans: True

III. Fill in the blanks/complete the sentence

1. In going from a rarer to denser medium, the ray of light bends **Towards normal**

2. The ration of sine of the angle of incidence to the sine of **Angle of refraction** is a constant.

3. The mirror used in search light is **Concave mirror**

4. The angle of deviation of light ray in a prism depends on the angle of **incidence**

5. The radius of curvature of a concave mirror whose focal length is 5cm is **10cm**

6. A spherical mirror whose reflecting surface is curved outwards is called **Convex** mirror.

7. Large **Concave** mirrors are used to concentrate sunlight to produce heat in solar furnaces.

8. All distances parallel to the principle axis are measured from the **Pole** of the mirror.

9. A negative sign in the value of magnification indicates that the image is **real**

10. Light is refracted or bent while going from one medium to another because its **speed, wavelength** changes.

IV. Match the following:

I.	**List I**		**List II**
1.	Ration of height of image to height of object	-	a) Concave mirror
2.	Used in hairpin bends in mountains.	-	b) Total internal reflection.
3.	Coin inside water appearing slightly raised.	-	c) Magnification
4.	Mirage	-	d) Convex mirror
5.	Used as dentists mirror	-	e) refraction

Ans: 1 – c; 2 - d ; 3 - e ; 4 – b; 5- a

2.	**Position of object**	**-**	**position of image**	**-**	**size and nature of image**
1.	Within focus	-	a) Between F and C	-	A) Magnified, Red, inverted
2.	At focus F	-	b) At C	-	B) Magnified, Virtual, erect
3.	Between F and C	-	c) Behind the mirror	-	C) Diminished, Red, inverted
4.	At C	-	d) Infinity	-	D) Highly Diminished, Real, inverted.
5.	Beyond C	-	e) At F	-	E) Highly magnified, Real, inverted.
6.	At infinity	-	f) Beyond C	-	F) Same size, real, inverted

Ans: 1–c-B; 2-d-E; 3-f-A; 4-b-F; 5-a-C; 6-e-D

V. Assertion & Reason:

In the following questions, the statement of assertion is followed by a reason. Mark the correct choice as:

a) If both assertion and reason are true and reason is the correct explanation.

b) If assertion is true but reason is false.

c) If Assertion is false but reason is true.

1. **Assertion :** For observing the traffic at a hairpin bend in mountain paths a plane mirror is preferred over convex mirror and concave mirror.

Reason : A convex mirror has a much larger field of view than a plane mirror or a concave mirror.

Ans: c) If Assertion is false but reason is true.

2. **Assertion :** Incident ray is directed towards the centre of curvature of spherical mirror. After reflection it retraces its path.

Reason : Angle of incidence I = Angle of reflection r = 0^o

Ans: a) If both assertion and reason are true and reason is the correct explanation.

VI. Very short answer type:

1. Give two examples of transparent medium that are denser than air.

Ans: i) Water ii) Glass

2. According to Cartesion sign convention which mirror and which lens has negative focal length?

Ans: i) Concave mirror ii) Concave lens

3. A coin in a glass beaker appears in rise as the beaker is slowly filled with water, why?

Ans: Due to the refraction

4. Name the mirror(s) that can give (i) an erect and enlarged image, (ii) same sized, inverted image.

Ans: (i) Concave mirror (ii) Concave mirror

5. Name the spherical mirror(s) that has/have (i) virtual principle focus (ii) Real principle focus

Ans: (i) Convex mirror (ii) Concave mirror

6. If an object is placed at the focus of a concave mirror, where is the image formed?

Ans: The image is formed at infinity.

7. Why does a ray of light bend when it travels from one medium to another?

Ans: Speed of light

8. What is speed of light in vacuum? Who first measured the speed of light?

Ans: i) Speed of light in vacuum is $3 \times 10^8 ms^{-1}$

ii) In 1665 the Danish astronomer Ole Roemer first estimated the speed of light.

9. Concave mirrors are used by dentists to examine teeth. Why?

Ans: It gives a magnified image of teeth.

10. Pick Out the concave and convex mirrors from the following and tabulate them.

(Rear-View, mirror, Dentists mirror, Torch-light mirror, Mirrors in shopping malls, Make-up mirror

Concave mirror	Convex mirror

• Dentists mirror • Torch light mirror • Make-up mirror	• Rear-View mirror • Mirrors in shopping malls

11. State the direction of incident ray which after reflection from a spherical mirror retraces its path. Give reason for your answer.

i) A ray passing through the center of Curvature (c) is reflected back along its own path.

ii) Reason: The ray is normal to the spherical mirror.

$\angle i=0, \angle r=0$

So the ray retraces its path.

12. What is meant by magnification? Write its expression. What is its sign for the

a) Real image B) Virtual image

Ans: Magnification is defined as the ratio of the height of the image (hi) to the height of the object (ho)

$m=\frac{hi}{ho}=\frac{-v}{u}$

a) Sign for the real image is negative

b) Sign for the virtual image is positive

13. Write a spherical mirror formula and explain the meaning of each symbol used in it.

Spherical mirror formula

$\frac{1}{f}=\frac{1}{u}+\frac{1}{v}$

f- focal length of a spherical mirror

y- distance of object

v- image distance

4.MATTER AROUND US

I. Choose the correct answer:

1. The physical state of water at 373k is …….

a) solid b) liquid

c) vapour d) plasma

2. Aniont the following …… is a mixture

a) common salt **b) juice**

c) carbon dioxide d) pure silver

3. When we mix a drop of ink in water we get a …….

a) Heterogeneous Mixture **b) Homogeneous Mixture**

c) Compound d) Suspension

4. The constituents that form a mixture are also called ……

a) Elements b) compounds

c) alloys **d) components**

5. ……has the same properties throughout the sample.

a) pure substance b) mixture

c) colloid d) suspension

6. Difference in …… is the principle used in fractional distillation.

a) solubility b) melting point

c) boiling point d) adsorption

7. The separation of denser particles from lighter particles done by rotation at high speed is called……..

a) filtration b) sedimentation

c) decantation **d) centrifugation**

8. …….. is essential to perform separation by solvent extraction method.

a) separating funnel b) centrifuge machine

c) filter paper d) sieve

9. Filtration method is effective in separating …… mixture.

a) solid-solid **b) solid-liquid**

c) liquid-liquid d) liquid-gas

10. For a simple distillation process we need to have ……

a) an evaporating dish b) a separating funnel

c) a filter with filter paper **d) a liebig condenser**

II. State whether the following statements are True or False. If false give the correct statement.

1. Liquids expand more than gases on heating.

Ans: False – Gases expand considerably on heating.

2. A compound cannot be broken into simpler substances chemically.

Ans: False – can be spitted into new substances by chemical methods.

3. Water has a definite boiling point and freezing point.

Ans: True

4. Buttermilk is an example of heterogeneous mixture.

Ans: True

5. Aspirin is composed of 60% Carbon, 4.5% Hydrogen and 35.5% Oxygen by mass. Aspirin is a mixture.

Ans: False, Aspirin is a compound.

6. Butter from curd be separated by centrifugation.

Ans: True

7. Oil and water are immiscible in each other.

Ans: True

8. Sublimation is the property of a substance to directly change from liquid to solid state.

Ans: False – change from solid to vapour.

9. Liquid – liquid colloids are called gels.

Ans: False – Liquid – liquid colloids are called emulsions.

10. Fractional distillation is used when the boiling point of the components have large difference.

Ans: False – Simple distillation is used when the bp of the components have large difference.

III. A. Match the following:

A		**B**
i) Element	-	a) Settles down on standing.
ii) Compound	-	b) Impure substance
iii) Colloid	-	c) Made up of molecules
iv) Suspension	-	d) Pure substance
v) Mixture	-	e) Made up of atoms

Ans: (i) – e; (ii) – d; (iii) – c; (iv) –a; (v) – b

B. Match the following:

A	B	C
1. Sand and camphor	i. Ink	a. Distillation
2. Acetone and water	ii. Miscible liquids	b. Chromatography
3. Pigments	iii) Immiscible liquids	c. Separating funnel
4. Salt and water	iv. Mixture of two solids	d. Fractional distillation
5. Water and kerosene	v. Soluble	e. Sublimation

Ans: 1-iv-e; 2-ii-d; 3-i-b; 4-v-a; 5-iii-c

IV. Fill in the blanks:

1. Evaporation is always accompanied by **decrease** in temperature.
2. 150^{o}C = **423**K
3. A **homogeneous** mixture has no distinguishable boundary between its components.
4. An example of a substance that sublimes is **naphthalene**
5. Latent heat is the energy used for **inter conversion of matter**
6. Alcohol can be separated from water by **Distillation**
7. Sand is removed from naphthalene by **Sublimation** method.
8. In petroleum refining, the method of separation used is **Fractional distillation**
9. Chromatography is based on the principle of **Adsorption**
10. The solubility of solid in water **increases** with an increase in temperature.

V. Short answer:

1. Why is it possible to row a boat in water but not pass through a wooden fence.

Ans: There are gaps between the molecules of water.

2. How does gaseous pressure arise?

Ans: The rapid motion and collision of molecules with the walls of the container causes pressure.

3. Define sublimation?

Ans: The process of conversion of matter from solid state directly into vapour state (without going to liquid state).

4. Which state of matter has the highest kinetic energy?

Ans: Gaseous state of matter.

5. A few drops of 'dettol' when added to water the mixture turns turbid. Why?

Ans: The oil droplets of dettol get suspended in water and create an emulsion.

6.Why are gases easily compressible whereas solids are incompressible?

Ans: The atoms and molecules in gases are much more spread out than in solids or liquids. They move freely and vibrate freely at high speed.

7. Hold a 'Smiley ball' and squeeze it can you compress it? Justify your answer.

Ans: A smiley ball has minute holes, in which air is trapped. When we press it the air is expelled out. So we are able to compress.

8. Which of the following are pure substances?

Ice, Milk, Iron, Hydrochloric acid, Mercury, Brick and water,

Ans: Iron, Hydrochloric acid, Mercury and water.

9. Oxygen is very essential for us to live. If forms 21% of air by volume. Is it at element or compound?

Ans: it is an element.

10. You have just won a medal made of 24-carat gold. Have you just procured a pure substance or impure substance?

Ans: A pure substance. Because, it is an alloy.

11. Name the method you would adopt to separate a mixture of ammonium chloride and common salt.

Ans: Sublimation

12. Define a solute and solvent?

Ans: Solute is the component present in smaller proportion in a solution/

Solvent is the component present in larger proportion in a solution.

13. Name the sublimate that you will be getting when you heat a mixture of i) iodine and sand ii) sodium chloride and ammonium chloride.

Ans: i) Iodine ii) Ammonium chloride.

14. What is meant by desalination of sea water?

Ans: The technique used to obtain drinking water from salt water is called desalination.

15. What is an adsorbate and adsorbent?

Ans: Adsorbate is a substance which gets adsorbed (adhered) to a surface of another substance.
Adsorbent is a substance which adsorbs another substance on its surface.

Example: Charcoal adsorbs gases on its surface. (charcoal – adsorbent, gas-adsorbate).

16. What is meant by R_f value?

Ans: R_f value is the ration of the distance travelled by the solute to the distance travelled by the solvent.

$$R_f = \frac{\text{Distance travelled by the solute}}{\text{Distance travelled by the solvent}}$$

17. Differentiate between filtrate and distillate.

Ans: Filtrate – The clear liquid which passes through the filter paper after filtration is called filtrate.

Distillate: The clear liquid which evaporates and then condenses during distillation is called distillate.

18. Name the apparatus that you will use to separate the components of mixtures containing two i) miscible liquids ii) immiscible liquids.

Ans: i) 'Liebig' condenser ii) Separating funnel

19. How will you separate a mixture containing saw dust, naphthalene and iron fillings?

Ans: By using magnetic separation iron filters can be removed from saw dust and naphthalene.

By using sublimation process, we can separate naphthalene from saw dust.

20. Write the difference between elements and compounds and give an example for each.

Ans:

S.No	Element	Compound
1	An element is made up of same kind of atoms	A compound is obtained from different kinds of atom.
2	An element cannot be broken down by physical Or chemical method.	A compound can be broken down into new substances by Chemical methods
3	An element is a purest substance	A compound is made of different elements
4	Represented using symbols	Represented using a formula

5	Example: Iron, Gold	Example: Water, CO2

5. ATOMIC STRUCTURE

I. Choose the correct answer:

1. Amont the following the odd pair is

a) $^{18}_{8}O$, $^{37}_{17}Cl$ b) $^{40}_{18}Ar$, $^{14}_{7}$ ^{14} N

c) $^{30}_{14}$si, $^{31}_{15}$ P d) $^{54}_{24}Cr$, $^{39}_{19}K$

2. Change in the number of neutrons in an atom changes it to

a) an ion **b) an isotope**

c) an isobar d) another element

3. The term nucleons refer to

a) protons and electrons b) only neutrons

c) electrons and neutrons **d) protons and neutrons**

4. The number of protons, neutrons and electrons present respectively in $^{80}_{35}Br$.

a) 80,80,35 b) 35,55,80

c) 35,35,80 **d) 35,45,35**

5. The correct electronic configuration of potassium is

a) 2,8,9 b) 2,8,1

c) 2,8,8,1 d) 2,8,8,3

II. True or False if false give the correct answer:

1. In an atom, electrons revolve around the nucleus in fixed orbits.

Ans: True

2. Isotopes of an element have the different atomic numbers.

Ans: False – They have different mass numbers.

3. Electrons have negligible mass and charge.

Ans: True (but they have negative charge).

4. Smaller the size of the orbit, lower is the energy of the orbit.

Ans: True

5. The maximum number of electron in L shell is 10.

Ans: False – the maximum number of electrons in L shell is 8.

III. Fill in the blanks:

1. Calcium and Argon are examples of a pair of **Isobars**
2. Total number of electrons that can be accommodated in an orbit is given by **$2n^2$**
3. **Iodine -131**Isotope is used in the treatment of goiter.
4. The number of neutrons present in $^{7}_{3}Li$ is **4**
5. The valency of Argon is **Zero**
6. Electrons present in the outer most shell **Valence**
7. This pair of atoms $^{40}_{20}Ca$, $^{40}_{18}Ar$ are **Isotones**
8. An atom that does not have neutron **Hydrogen**
9. Scattering of particles in the gold foil experiment **Rutherford**
10. Helium Nuclei(particle) **Alpha**
11. Positive charge mass at the core of the atom **Nucleus**
12. An atom whose valency is zero **Neon**
13. One or two electrons in the outermost shell of atoms of elements are called as **Metals** electrons.
14. $^{14}_{6}c$ is used for carbon **dating**
15. Discovery of neutron **Chadwick**

IV. Match the following:

a. Dalton	-	1. Hydrogen atom model
b. Thomson	-	2. Planetary model

c. Rutherford - 3. First atomic theory

d. Neils Bohr - 4. Plum pudding model

5. Discovery of neutrons

Ans: a -3, b -4, c – 2, d - 1

a. Mass of proton - 1) 1. 6 x10^{-19}C

b. Planetary model - 2) -1. 6 x10^{-19}C

c. Charge of electron - 3) 9.31 x 10^{-28} g

d. Charge of proton - 4) 1.67 x 10^{-24} g

Ans: a -4, b -3, c -2, d -1

V. Complete the following table:

Atomic Number	Mass Number	Number of Neutrons	Number of Protons	Number of Electrons	Number of the Element
9	-	10		-	-
16	-	16	-	-	-
-	24	-	-	12	Magnesium
-	2	-	1	-	-
-	1	0	1	1	-

Ans:

Atomic Number	Mass Number	Number of Neutrons	Number of Protons	Number of Electrons	Number of the Element
9	19	10	9	9	Fluorine
16	32	16	16	16	Sulphur
12	24	12	12	12	Magnesium
1	2	1	1	1	Deuterium
1	1	0	1	1	Protium

VI. Arrange the following in the increasing order of atomic number:

Calcium, Silicon, Boron, Magnesium, Oxygen, Helium, Neon, Sulphur, Fluorine and Sodium

Ans: Helium < Boron < Oxygen < Fluorine < Neon < Sodium < Magnesium < Silicon < Sulphur < Calcium

VII. Short answer:

1. Name an element which has the same number of electrons in its first and second shell.

Ans: Beryllium (2,2)

2. Write the electronic configuration of K^+ and Cl^-

Ans: Electronic configuration of K^+ is (2,8,8)

Electronic configuration of Cl^- is (2,8,8)

So, they are Iso-electonic.

3. Compare the charge and mass of protons and electrons.

Ans: Particle	**Charge**	**Mass**
Proton	$1.602 \times 10^{-19}C$	$1.672 \times 10^{-24}g$
Electron	$1.602 \times 10^{-19}C$	$9.108 \times 10^{-24}g$

4. For an atom 'X', K, L and M shells are completely filled. How many electrons will be present in it?

Ans: Total number of electrons = K + L +M

= 2+8+18=28

$$28\left[\underset{K}{S^2}\quad \underset{L}{IS^2\,2P^6}\quad \underset{M}{3S2\;3P^6\;3d^{10}}\right]$$

5. Ca^{2+} has completely filled outer shell. Justify your answer.

Ans: Ca has electronic configuration 2,8,8,2. After losing 2 c-s it becomes 2,8,2 (completely filled outer shell.

$Ca - 2e \rightarrow Ca^{2+}$

2,8,8,2 2,8,8 (completely filled)

6. State the law of multiple proportion?

Ans: When two elements A and B combine together to form more than one compound, then masses of A which separately combines with a fixed mass of B are in simple ratio.

7. List the uses of isotopes?

Ans: Cobalt-60 isotope is used in the treatment of Cancer.

Uranium -235 acts as a fuel in nuclear reactors.

7. What is isotone? Give an example?

Ans: Atoms of different elements with

- Different atomic numbers
- Different mass numbers.
- Same number of neurtrons.

Example $^{11}_{5}B$, $^{12}_{6}C$

8. Calculate the number of neutrons, protons and electrons.

i) atomic number 3 and mass number 7

ii) atomic number 92 and mass number 238

S.No	Element	Neutrons	Protons	Electrons
i	$_{3}X^{7}$	$_{2}4$	3	3
Ii	$_{92}Y^{238}$	145	92	92

6.LIVING WORLD OF PLANTS- PLANT PHYSIOLOGY

I. Multiple choice Questions:

1. A bog tree falls in a forest but its roots are still in contact with the soil. The branches of this fallen tree straight up. This happens in response to ……

a) water and light b) water and minerals

c) gravity and water d) light and gravity

2. The tropic movement that helps the climbing vines to find a suitable support is ……

a) phototropism b) geotropism

c) thigmotropism d) chemotropism

3. The chemical reaction occurs during photosynthesis is ……..

a) **CO_2 is reduced and water is oxidized**

b) water is reduced and CO_2, is oxidized.

c) both CO_2 and water are oxidized

d) Both CO_2 and water are produced

4. Transpiration is best defined as ……..

a) loss of water by the plant

b) evaporation of water from the aerial surfaces from the plant.

c) loss of water in the form of water vapour from the underground parts of the plant body

d) release of water from the plant into

5. The bending of root of a plant in response to water is called…….

a) thigmonasty b) phototropism

c) **hydrotropism** d) photonasty

6. A growing seeding is kept in the dark room. A burning candle is placed near it for a few days. The top part of the seeding bends towards the burning candle. This is an example of …….

a) chemotropism b) thigmotropism

c) phototropism d) geotropism

7. The root of the plant is …….

i) positively phototropic but negatively geotropic

ii) positively geotropic but negatively phototropic.

iii) negatively phototropic but positively hydrotropic.

iv) negatively hydrotropic but positively phototropic.

a) (i) and (ii) **b) (ii) and (iii)**

c) (iii) and (iv) d) (i) and (iv)

8. The plant part which exhibits negative geotropism is …….

a) root **b) stem**

c) branch d) leaves

9. The non-directional movement of a plant part in response to temperature is called ……..

a) thermotropism **b) thermonasty**

c) chermotropism d) thigmonasty

10. Dandelion flowers open the petals in bright light during the day time but close the petals in dark at night. The response of Dandelion flowers is called ……

a) geonasty b) thigmonasty

c) chemonasty **d) photonasty**

11. During photosynthesis plants exhale ……

a) carbondioxide **b) oxygen**

c) hydrogen d) helium

12. ChlorophyII in a leaf is required for …….

a) photosynthesis b) transpiration

c) tropic movement d) nastic movement

13. A plant is kept in a dark room for about 24 hours before conducting any experiment on photosynthesis in order to …….

a) remove chlorophyII from the leaf. **b) remove starch from the leaves**.

c) ensure that photosynthesis occurred. d) to prove transpiration.

14. Transpiration takes place through ……

a) fruit b) seed

c) flower **d) stomata**

II. State whether the following statements are true or false. If false, write the correct sentence:

1. The response of plant to the chemical stimulus is called phototropism.

Ans: False – Chemotropism.

2. Shoot is positively phototropic and negatively geotropic.

Ans: True

3. Scientific term used to represent the bending of roots towards water is called geotropism.

Ans: False - Hydrotropism

4. Joseph priestley devised an experiment to find out that water alone was the cause of the increase in the weight of the plant.

Ans: False – it was VanHelmont who thought that water alone was the cause of the increase in weight of the plant.

5. When the weather is hot water evaporates lesser which is duet o opening of stomata.

Ans: False – When the weather is hot water evaporates more which is due to opening of stomata.

6. When the leaves of Mimosa Pudica plant are touched with the finger, they fold up quickly. This is an example of thigmonasty.

Ans: True

7. The petals of moon flower open up in morning and closes in the evening. This is called photonasty.

Ans: False - open in night and closes in the day. The movement is thermonasty (or) photonasty.

8. Photosynthesis produces glucose and carbondioxide.

Ans: False – it produces glucose and oxygen,

9. Photosynthesis is important in releasing oxygen to keep the atmosphere in balance.

Ans: True

10. Plants lose water when the stomata on leaves are closed.

Ans: False – plant lose water when the stomata on leaves are kept open.

III. Fill in the blanks:

1. The shoot system grows upward in response to **Phototropism**

2. **Root** is positively hydrotropic as well as positively geotropic.

3. The green pigment present in the plant is **ChlorophyII**

4. The minerals like nitrogen, potassium and phosphorus are required in substantial quantity by the plants are called **Macronutrients**

5. The solar tracking of sunflower in accordance with the path of sun is due to **heliotropism**

6. The response of a plant part towards gravity is **geotropism**

7. When the leaves of a sensitive plant are touched with a finger, they fold up and when light fades at dusk the petals of a Dandelion flower close. These two plants show **thigmonastic** and **photonastic** movement.

8. Opening and closing of Moon flower is not a tropism because the movement in this is **Ny….nasty**

9. The raw material for photosynthesis are **CO_2** and **H_2O**

10. When iodine solution is added for testing starch, part of the leaf with **starch** turn blue-black colour.

11. In leaves, the food is stored in the form of **starch**

12. Plants may inhale carbondioxide for photosynthesis but need **oxygen** For their living.

13. Plants utilize only **1** % of the absorbed water for photosynthesis and the other activities.

14. Plants inhale and exhale continuously through the **stomata**

IV. Match the following:

Column A		Column B
1. Roots growing downwards into soil	-	a) Positive phototropism
2. Shoots growing towards the light	-	b) Negative geotropism
3. Shoots growing upward	-	c) negative phototropism
4. Roots growing downwards away from light.	-	d) Positive geotropism

Ans: 1 –d; 2 –a; 3- b; 4 –c

B. Match the following:

Column A	Column B	Column C
1) Photonasty	a) Response to temperature	A) Tulipa Sp
2) Thigmonasty	b) Response to light	B) Mimisa pudic
3) Thermonasty	c) Response to touch	C) Moon flower

Ans: 1-b-C; 2-c-B; 3-a-A

V. Assertion and Reason

1) Assertion (A) : If the plant part moves to the direction of gravity it is called positive geotropism.

Reason (R) : Stem shows positive geotropism.

a) A and R are incorrect b) A is incorrect R is correct

c) A is correct, R is incorrect d) Both A and R are correct

2) Assertion (A) :The loss of excess water from the aerial parts of the plant in the form of water vapour is known as transpiration.

Reason (R) : Stomata of the leaf performs transpiration.

a) A and R are incorrect b) A is incorrect R is correct

c) A is correct, R is incorrect **d) Both A and R are correct**

VI. Analog

1. Towards a stimulus : ……

Away from the stimulus : Negative tropism

2. Hydrotropism : Response towards

Water phototropism : ……

3. Photosyntheiss : ……

Transpiration : Stomata

Ans: 1) Positive Tropism 2) Response towards light 3) ChlorophyII

VII. Short Answer:

1. Give an example for a plant whose leaf shows a mesmerizing movement.

Ans: Desmodium gyrans (Indian Telegraph plant)

2. Write the scientific terms used to represent the following:

a) Growing of roots towards the gravity.

b) Bending of roots towards the water.

Ans: a) positive geotropism and positive hydrotropism – root.

b) Positive phototropism – stem

3. What is nastic movement?

Some movements in plants not directed towards stimuli is known as Nastic movement.

4. Name the plant part.

a) Which bends in the direction of gravity but away from the light?

Ans: root

b) Which bends towards light but away from the force of gravity?

Ans: Shoot

5. Differentiate Phototropism from Photonasty

Phototropism	Photonasty
1) Unidirectional, response to the stimulus of light.	1) Non directional response to the stimulus of light.
2) Growth dependent movement	2) Growth independent movement
3) Permanent and irreversible.	3) Temporary and reversible
4) Slow action Eg. Growth of stem towards light	4) Immediate fast action Eg. Unfolding of Dandelion flower in the morning and closing in the evening.

6. Photosynthesis converts energy X into energy Y

a) What are X and Y

Ans: X – Solar energy; Y- Chemical energy

b) Green plants are autotrophic in their mode of nutrition, why?

Ans: Green plants have green pigment, so can prepare food directly from sunlight using CO_2 and H_2O as raw material. Almost all the organisms rely on plant for their food – so green plants are autotrophic.

7. Define Transpiration.

Ans: The loss of water in the form of water vapour from the aerial parts of the plant body is called Transpiration.

8. Give the technical terms for the following:

a) Growth dependent movement in plants. – **Ans: Tropism or tropic movement**

b) Growth independent movement in plants. – **Ans: Nastic movement**

9. Name the movement seen in pneumatophores of Avicennia.

Ans: Negative geotropic

10. What is the other name for thigmonasty

Ans: Seismonasty

11. Which flowering plant shows photonasty just opposite to that of Dandelion.

Ans: Ipomoea Alba (moon flower)

12. Give an example for negative hydrotropism.

Ans: Pneumatophores of Avicennia.

13. Which gas is evolved during photosynthesis.

Ans: Oxygen

14. What is chlorophyII

Ans: Green pigment capable of trapping solar energy.

15. Give an example for micronutrients

Ans: Zinc

16. Name the part of plant which shows positive geotropism. Why?

Tendency of roots to grow downwards is known as positively geotropic.

17. What does a Mimosa pudica plant do in response to touch? What is phenomenon known as?

It folds up and droop and this phenomenon is known as thigmonasty or seismonasty.

18. i) What happens to the dandelion flower a) during the day time; b) at night

ii) What is the phenomenon known as?

During the day time the flower unfolds and it closes in the evening or night. This phenomenon is known as photonasty.

19. What is the difference between the movement of flower in sunflower plant and closing of the leaves in the Minosa pudica?

In Sunflower, the flower tracks and moves in response to the direction of sun. This response is known as Heliotropism.

In Mimosa pudica (touch-me-not) plant the leaves fold up and droop. This type of movement is also known as seismonasty or thigmonasty.

Unlike tropic movement, nastic movements are independent of the stimulus direction and may or may not be growth movement.

20. Complete the following table with the different types of tropism:

Stimulus		**Gravity**	**Unilateral light**	**Water**
Tropism		Geotropism	?	Hydrotropism
Response	Shoot	?	Positive	No response

	Root	Positive	?	?

Ans:

Stimulus		Gravity	Unilateral light	Water
Tropism		Geotropism	Phototropism	Hydrotropism
Response	Shoot	Negative geotropism	Positive Phototropism	No response
	Root	Positive geotropism	Negative Phototropism	Positive hydrotropism

21. Mention the difference between Stomatal and lenticular transpiration.

Stomatal	Lenticular
1) Most dominant one	Not at all dominant
2) Most of water loss – (ie) 90- 95% of the total amount	Occur through tiny openings that protrude from the barks in woody stems and twigs.
3) Occur in all plants.	Only in trees with bark.

7. Give an example for the movement plant part which is very quick and can be observed easily.

The easily observable and quick movement that can be seen in a plant is the falling of leaf – in Mimosa pudica by thigmonasty.

22. To which directional stimuli do a) roots respond; b) shoots respond?

a) The roots respond to geotropic and hydrotropic stimuli where as

b) shoots respond to phototropic stimulus.

23. Name the cell that surround the stoma?

The cells that surround the stoma are guard cells.

7. LIVING WORLD OF ANIMALS–DIVERSITY IN LIVING ORGANISM–KINGDOM ANIMALIA

1. Choose the correct answer:

1. Which is not an insect?

a) Housefly b) Bedbug

c) Mosquito **d) Spider**

2. Find the group having only marine members.

a) Mollusca b) Porifera

c) Coelenterata **d) Echinodermata**

3. Mesogloea is present in

a) Porifera **b) Coelenterata**

c) Annelida d) Arthropoda

4. Dysentery is caused by

a) Entamoeba b) Euglena

c) Plasmodium d) Paramecium

5. Which one of the following pairs is not a poikilothermic animal.

a) Fishes and amphibians b) Amphibians and Aves

c) Aves and Mammals d) Reptiles and mammals

6. Identify the animal having four chambered heart.

a) Lizard b) Snake

c) Crocodile d) Caloted

7. Which is not a feature of chordates

a) Green glands b) Sweat glands

c) Sebaceous glands d) Mammary gland

8. The bilateral symmetrical larvae which transform into radialy symmetry aduslts

a) Bipinnaria b) Trochophore

c) Tadpole d) Polyp

9. The animal without skull is

a) Acrania b) Acephalia

c) Apteria d) Acoelomat

10. Choose the correct terms related for Hemichordate

a) Vermiform, unsegmented, triploblastic, ciliary feeders

b) Vermiform, segmented, triploblastic, ciliary feeders

c) Vermiform, unsegmented, diploblastic, ciliary feeders

d) Vermiform, unsegmented, triploblastic, filter feeders

11. Hermaphrodite organisms are

a) Hydra, Tape worm, Earthworm, Amphioxus

b) Hydra, Tape worm, Earth worm, Ascidian

c) Hydra, Tape worm, Earth worm, Balanoglossus

d) Hydra, Tape worm, Ascaris, Earthworm

12. Polikilothermic organisms are

a) Fish, Frog, Lizard, Man b) Fish, Frog, Lizard, Cow

c) Fish, Frog, Lizard, Snake d) Fish, Frog, Lizard, Cow

13.Crop, gizzard and air sacs are seen in

a) Fish b) Frog

c) Bird d) Bat

14. Excretory organ of tape worm is

a) Flame cells b) Nephridia

c) Body surface d) Solenocytes

15. Tube like alimentary canal is found in

a) Hydra b) Earth worm

c) Starfish **d) Ascaris**

16. During ecdysis which of the following is shed off

a) Chitin b) Mantle

c) Scales d) Operculum

17. Cephalization is related to

a) **Head formation** b) Gut formation

c) Coelom formation d) Gonad formation

II. Fill in the blanks:

1. The excretory opening of porifera is **Osta or Osculum**
2. The second largest phylum of animal kingdom is **Mollusca**
3. In India National deworming day is observed on **February 10th in India**
4. Myotomes are seen in **Fishes**
5. The larvae of an amphibian is **Tadpole**
6. In birds the air sacs communicate with **Bones**
7. Placenta is the unique characteristics feature of **Mammals**
8. The binomial name of our National bird is **Pavo Cristatus**
9. Blue revolution is the rearing of **Fishes and Prawns**
10. In mammals testis are enclosed by **Scrotalsacs**

III. State whether true or false:

1. Canal system is seen in coelenterates. **- False**
2. Hermaphrodite animals have both male and female sex organs. **- True**
3. Nephridia are the respiratory organ of Annelida. **- False**
4. Bipinnaria is the larva of Mollusca . **– False**
5. Balanoglossus is a ciliary feeder. **- True**
6. Fishes have two chambered heart. **- True**
7. Skin of reptilians are smooth and moist. **- False**
8. Wings of birds are the modified forelimbs. **- True**
9. Female mammals have scrotal sacs. **- False**

IV. Match the following:

Phylum		Examples
A. Coelenterata	-	i) Snail
B. Platyhelminthes	-	ii) Starfish
C. Echinodermata	-	iii) Tape worm
D. Mollusca	-	iv) Hydra

Ans: A - iv; B - iii; C - ii; D - i

V. Understand the assertion statements. Justify the reason given and choose the correct choice:

1. Assertion (A): The hydra is a diploblastic organism.

   Reason (R) : They have two germ layers.

   a) A is correct and the R is wrong b) R is correct and the A is wrong

   c) Both A and R is correct d) Both A and R is wrong

2. Assertion (A): The prochordates are grouped under Acrania.

   Reason (R) : They have well defined cranium.

   a) A is correct and the R is wrong b) R is correct and the A is wrong

   c) Both A and R is correct d) Both A and R is wrong

VI. Give very short answers:

1. Define taxonomy?

It is the theoretical study of classification including its basic principles, procedures and rules.

2. What is nematocyst?

The tentacles of coelenterates animals like hydra, jelly fishes, bear stinging cells are called nematocysts. They are helpful in defense and used for capturing the prey.

3. Why coelenterates are called diploblastic animals?

The body wall of coelenterats are made up of two layers outer extoderm and inner endoderm. Hence it is known as diploblastic animals.

4. Which organism is called as friends of farmers? Why?

Earthworm is called as friends of farmers. By its bodily movements makes the soil loose and increases the water holding capacity and makes the soil ready for cultivation. The vermicast exreta of earthworm is a very good manure for the soil. Hence it is known as friends of farmer.

5. List the respiratory organs of amphibians?

The respiratory organs of amphibians are gills, skin bucco- pharynx and lungs.

6. Differentiate between tube feet and false feet?

S.No	Tube feet	False feet
1	Tube feet present in star fish	Present in amoeba
2	Function Loco motion, respiration, sensory and food capturing	Loco motion, food capturing
3	Permanent	Temporary

7. Are Jelly fish and star fish similar to cat fish? Give reasons.

-No, All the three organisms belong to different category.

-Jelly fish belongs to the phylum coelenterate.

-Starfish belongs to the phylum Echinodermata.

- Cat fish which is known keluthi belongs to the class Pisces or fish.

8. What is Acrania?

The prochordates do not have a cranium or skull they are referred to as Acrania (Eg.) Balanoglossus.

9. What are the sub-phylum of Prochordates?

The sub-phylum of prochordates are cephalochordate, hemichordate and urochordata.

10. Why are frogs said to be amphibians?

As frog lives both in the water and on land they are called as amphibians. The larva form of frog is aquatic.

11. What is silver revolution?

Silver revolution is practice of raising poultry such as chickens, turkeys, ducks, geese as a sub category of husbandry for the purpose of farming meat or egg for food.

8.HEALTH AND HYGIENE- FOOD FOR LIVING

I. Multiple choice question:

1. The nutrient required in trace amounts to accomplish various body functions is …….

   a) Carbohydrate b) protein

   c) vitamin d) fat

2. The physician who discovered that scurvy can be cured by ingestion of citrus fruits is ……..

   a) James Lind b) Louis Pasteur

   c) Charles Darwin d) Issac Newton

3. The sprouting of onion and potatoes can be delayed by the process of ……..

   a) Freezing **b) Irradiation**

   c) Salting d) Canning

4. Food and Adulteration Act was enacted by Government of India in the year ……

   a) 1964 **b) 1954**

   c) 1950 d) 1963

5. An internal factor responsible for spoilage of food is ……

   a) Wax coating b) Contaminated utensils

   c) Moisture content in food d) Synthetic preservatives

II. Fill in the blanks:

1. Deficiency diseases can be prevented by taking **balanced** diet.

2. The process of affecting the natural composition and the quality of food substance is known as **Adulteration**

3. Vitamin D is called as **Sunshine** vitamin as it can be synthesized by the body from the rays of the sun.

4. Dehydration is based on the principle of removal of **water / moisture**

5. Do not purchase food beyond the date of **expiry**

6. AGMARK is used to certify **Agriculture** and **live stock** products in India.

III. Mention whether the following statements are true or false. If false, give the correct statements:

1. Iron is required for the proper functioning of Thyroid gland.

Ans: False – For the functioning of thyroid hormone, Iodine is required.

2. Vitamins are required in large quantities for normal functioning of the body.

Ans: False – Vitamins are viral nutrients, required in minute amounts to perform special functions, for normal functioning of the body.

3. Vitamin C is a water soluble vitamin.

Ans: True

4. Lack of adequate fats in diet may result in low body weight.

Ans: True

5. ISI mark is mandatory to certify agricultural products.

Ans: False – It is meant to certify industrial products like electrical appliances like switches, wiring cables, water heater etc. Agmark is mandatory to certify Agricultural products.

IV. Match the following:

A		B
1. Calcium	-	a. Muscular fatigue
2. Sodium	-	b. Anaemia
3. Potassium	-	c. Osteoporosis
4. Iron	-	d. Goitre
5. Iodine	-	e. Muscular cramps

Ans: 1-c; 2-e; 3-a; 4-b; 5-d

V. Fill in the blanks with suitable answers:

Vitamin	Rich Source	Deficiency Diseases
Calciferol		Rickets
	Papaya	Night blindness
Ascorbic acid		

	Whole grains	Beri beri

Ans:

Vitamin	Rich Source	Deficiency Diseases
Calciferol	Liver egg	Rickets
Retinol	Papaya	Night blindness
Ascorbic acid	Citrus fruits	Scurvy
Thiamine	Whole grains	Beri beri

VI. Unscramble the words in the brackets to complete the sentences.

Salting is a process involving addition of …… (aslt) removes the …….(oitmsuer) content in the …… (dofo) by the process of …… (sosisom) and prevents the growth of …….. (artcaeib).

Ans: Salt; Moisture; food; osmosis; bacteria.

VII. Give abbreviations for the following food standards:

1. ISI - Indian Standards Institution
2. FPO - Fruit Process Order
3. AGMARK - Agricultural Marking
4. FCI - Food Corporation of India
5. FSSAI - Food Safety and Standard Authority of India

VIII. Assertion and Reason

Direction: In the following question a statement of a Assertion is given and a corresponding state of a Reason is given just below it. Of the statements given below, mark the correct answer as:

a) If both Assertion and Reason are true and the Reason is the correct explanation of Assertion.

b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

c) If Assertion is true but Reason is false.

d) If both Assertion and Reason is false.

1. Assertion : Haemoglobin contains iron.

Reason: Iron deficiency leads to anaemia.

Ans: a) If both Assertion and Reason are true and the Reason is the correct explanation of Assertion.

2. Assertion: AGMARK is a quality control agency.

Reason: ISI is a symbol of quality.

Ans: b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

IX. Short answer:

1. Differentiate a) Kwashiorkar from Marasmus

No.	Kwashiokar	Marasmus
1	Protein deficiency affecting children between 1-5 years.	Protein deficiency affecting infants below the age of one year
2.	Symptoms: face and feet swelling, belly enlarged	Weight loss and body muscle waste severe diarrhea.
3	Children whose diet mainly consists of carbohydrates but poor in protein.	Children whose diet is poor in carbohydrates, fats and proteins.

b) Macronutrients from Micronutrients

No.	Macro nutrients	Micro nutrients
1	They are needed in greater concentration.	They are needed in slightly lower concentration.
2.	Eg. Calcium magnesium, Potassium and phosphorus.	Eg. Iron, copper, Zinc and Manganese.

2. Give reasons why salt us used as a preservative in food.

- Addition of salt removes the moisture content in the food by osmosis.

- It prevents the growth of bacteria and reduces the activity of microbial enzymes.

3. What is an adulterant?

It is the substance when added or subtracted from food, can change the natural composition and quality of food substance.

4. A doctor advises an adolescent girl who is suffering from anaemia to include more of leafy vegetables and dates in her diet. Why so?

-Anaemia occur due to deficiency of haemoglobin in the blood.

- Iron is essential for the formation of haemoglobin.

- Green leafy vegetables & dates are rich in iron. So by taking green leafy vegetables & dates she can solve her (anaemic problem)

5. Name any two naturally occurring toxic substances in food.

- Prussic acid in seeds of apple

- Marine toxins (like mercury) in fish food.

- toxins in toxic mushrooms.

6. What factors are required for the absorption of vitamin D from the food or by the body?

- Calcium and vitamin D together essential for bone health.

- Human skin can synthesis vitamin D when exposed to sunlight.

- When sun rays fall on the skin dehydro-cholesterol is converted into vitamin D. Hence vitamin D is known as sunshine vitamin.

7. Write any one function of the following minerals.

a. Calcium – constitution of bone

b. Sodium – maintains acid base

c. Iron – Important component of haemoglobin

d. Iodine – formation of thyroid hormone.

8. Explain any two methods of food preservation.

a. Drying (Dehydration)

By sun drying water content can be removed. Eg. cereals, fish

Drying - inhibit the growth of micro organism such as bacteria, moulds.

Vacuum drying – milk and cheese powder.

Hot air drying – grapes dry fruits etc.

b. Smoking

Food like meat and fish are exposed to smoke, and smoking preserves the food.

9. Sanjana wants to buy jam bottle in a grocery shop. What are the things she should observe on the label before purchasing it.

She must check-Agmark certification on the label to check food safety. She should also look for expiry date to avoid using expired products.

10. Give one reason for the following statements.

a) Salt is added as preservative in pickles.

Ans: To remove moisture

To prevent growth of bacteria.

b) We should not eat food items beyond the expiry date.

Ans: Because after expiry it gets denatured and sometimes become toxin. It would have got spoilt and could cause food poisoning.

c) Deficiency of calcium in diet leads to poor skeletal growth.

Ans: Calcium is important for constitution of bone. So deficiency causes poor skeletal growth.

11. What are the effects of consuming adulterated food?

- Consumption of adulterated food may lead to serious health issues like fever, diarrhea, nausea vomiting etc.

- Immunity is reduced.

- In serve case even kidney and liver failure colon cancer or even birth defects may occur in the foetus.

12. How are Vitamins useful to us?

Vitamins	Sources	Deficiency Disorders	Symptoms
Vitamin A (Retinol)	Carrot, Papaya, Leafy vegetables, fish, liver oil, egg yolk, liver, dairy products	Xerophthalmia Nyctalopia (Night blindness)	Dryness of cornea Unable to see in the night (dim light) Scaly skin
Vitamin D (Calciferol)	Egg, liver, dairy products, fish, synthesized by the skin in sunlight	Rickets (in children)	Bow legs, defective ribs, development of pigeon
Vitamin E (Tocopherol)	Whole wheat, meat, vegetable oil, milk	Sterility in rats, Reproductive abnormalities	Sterility

Vitamin K (Derivative of Quinone)	Leafy vegetables, soya beans, milk	Blood clotting is prevented	Excessive bleeding due to delayed blood clotting

13. Role of food control agencies in India

	ISI (Indian Standards Institution) known as Bureau of Indian Standard (BIS)	Certifies industrial products like electrical appliances like switches, wiring cables, water heater, electric motor, kitchen appliances etc.
	AGMARK (Agricultural Marking)	Certifies agricultural and livestock products like cereals, essential oils, pulses, honey, butter etc
	FPO (Fruit Process Order)	Certifies the fruit products like juices, jams, sauce, canned fruits and vegetables, pickles etc.,
	Food Safety and Standard Authority of India	Responsible for protecting and promoting the public health through regulation and supervision of food safety.

9.COMPUTER AN INTRODUCTION

I. Choose the correct answer:

1. ……. Is an electronic device which stores data and information.

a) Telescope b) Television

c) Computer d) Radio

2. …… belongs in the generation IV of the computer.

a) Microprocessor b) Artificial Intelligence

c) Transistor d) Vaccum Tubes

3. Data processing involves ……. steps.

a) Seven b) Four

c) Six d) Eight

4. 1. Abacus belongs to the first generation of the computer.

2. ENIAC was used in the American military.

a) Both the statements are correct **b) Statement 1 is wrong but 2 is correct**

c) Statement 1 is correct but 2 is wrong d) Both the statements are wrong

II. Match the following:

1. III generation computer	-	a) integrated circuit
2. Text, number	-	b) information
3. Transistor	-	c) Father of computer
4. Directly used	-	d) Data
5. Charles Babbage	-	II generation

Ans: 1-a, 2-d, 3-e, 4-b, 5-c

III. Short Answer Questions :

1. Define computer.

Computer is an electronic device which manipulates and stores data and information through commands or program codes.

2. Differentiate data and information.

Data		Information
1. Set of values of qualitative and quantitative variables.	-	Processed data
2. It cannot be used directly	-	it can be used directly

3. What is data processing?

The data processing in a computer is collecting data and converting it into information according to our needs and requirements.

4. List out the generations of computer.

Ans: 1. The history of computer has been classified into many stages.

2. The main difference between the generations is the speed and efficiency of computer.

5. On the basis of performance and speed the generations of the computer was categorized as follows:

Period	Generation	Digital device used

1.	1940-1956	First	Vaccum tube
2.	1956-1963	Second	Transistor
3.	1964-1971	Third	Integrated circuit
4.	1972-2010	Fourth	Micro processor
5.	After 2010	Fifth	Artificial intelligence