

Class : 9Register
Number**COMMON QUARTERLY EXAMINATION - 2022 - 23**

Time Allowed : 3.00 Hours]

SCIENCE

[Max. Marks : 75

12x1= 12

I Choose the correct answer,

- Which among the following is not a device to measure mass?
a) spring balance b) Beam balance c) physical balance d) Digital balance
- 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 the clock
- Clouds float in atmosphere because of their low
a) density b) pressure c) velocity d) mass
- is essential to perform separation by solvent extraction method.
a) separating funnel b) filter paper c) colloid d) suspension
- 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
- If Dobereiner is related with 'law of triads' then Newlands is related with
a) modern periodic law b) Hund's rule c) law of octaves d) Pauli's exclusion principle
- Messoglea is present in -----
a) porifera b) coelenterata c) Annelida d) arthropoda
- is the example of jawless vertebrates
a) Aseidian b) Amphioxus c) Lamprey d) skates
- The fibres consist of -----
a) parenchyma b) selenchyma c) collenchyma d) none of above
- Aerenchyma is found in -----
a) epiphytes b) hydrophytes c) halophytes d) xerophytes
- Chlorophyll in a leaf is required for -----
a) photosynthesis b) tropic movement c) transpiration d) nastic movement
- The slides are grouped together in a sequence to form -----
a) slide show b) charts c) page d) messages

II Write any seven questions only. (Q.No.22 is compulsory)

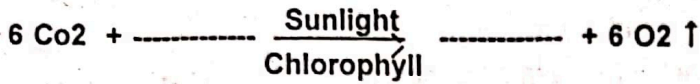
7x2=14

- Define least count of any device?
- Compare speed and velocity.
- Match the following:
 - Density - a) hpg
 - Pascal's law - b) milk
 - pressure exerted by a fluid - c) mass/volume
 - Lactometer - d) pressure
- Name the components in each of the following mixtures.
 - Lemonade
 - Air
- Fill in the blanks.
 - Noble gases belong to ----- group of the periodic table.
 - Example for liquid metal is -----.

CH /9 /Sci /1

18. What is nematocyst?
19. State whether true or false. If false correct the statement.
- Paramchyma is a simple tissue.
 - Phloem is made up of tracheids.

20. Fill in the blanks.



21. Write the steps to view a slide show.

22. Draw an atom of oxygen.

III Write any seven questions. (Q.No.32 is compulsory)

7x4=28

- Differentiate mass and weight.
- Explain different types of motion.
- Why does a helium balloon float in air?
 - State Pascal's law?
- Write the differences between elements and compounds and give an example for each.
- Explain the postulates of Bohr's atomic model.
- State any four features of modern periodic table.
- Give an account on phylum Annelida.
- Write about the types of meristems based on position.
- Differentiate between tropic and nastic movements.
- Write the some more particles of nucleus.
 - Write the electronic configuration of K and Cl.

IV Answer briefly (If need draw the diagram)

3x7=21

- Write the rules that are followed in writing the symbols of units in SI system.
 - Fill in the blanks.
 - Metre is the unit of -----.
 - Thickness of a cricket ball is measured by -----.

(OR)

- Explain the construction and working of a hydrometer with diagram.
34. Explain Tyndall effect and Brownian movement with suitable diagram.

(OR)

- State modern periodic law.
- What are groups and periods in the modern periodic table.

35. i) Give an account on phylum Arthropoda.

ii) Match the following:

- | | | | |
|--------------------|---|----------------|---|
| a) Coelenterata | - | i). Snail | 4 |
| b) Platyhelminthes | - | ii) Star fish | 3 |
| c) Echinodermata | - | iii) Tape worm | 2 |
| d) mollusca | - | iv) Hydra | 1 |

(OR)

- List out the differences between mitosis and meiosis.
- Write the types of cell division.

3/10/2022

Science Assignment

I

Choose

1. a) Spring balance
2. c)
3. a) density
4. a) Separating funnel
5. c) 2, 8, 8, 1
6. c) law of octaves
7. b) coelenterata
8. a) Ascidian
9. b) sclerenchyma
10. b) hydrophytes
11. a) photosynthesis
12. a) Slide show

II

Answer the following

13. least count of the instrument (L.C)
- $$= \frac{\text{value of one main scale division}}{\text{Total number of vernier scale division}}$$

The main scale division will be in centimeter, further divided into millimetre. The value of the smallest main scale division is 1mm. In the vernier scale there will be 10 divisions.

$$L.C = \frac{1\text{mm}}{10} = 0.01\text{m} = 0.01\text{cm}$$

14.

Speed	Velocity
Speed is the rate of change of distance or the distance travelled in unit time.	Velocity is rate of change of displacement. It is the displacement in unit time.
It is a scalar quantity.	It is a vector quantity.
The SI unit of speed is ms^{-1} .	The SI unit of velocity is ms^{-1} .
Speed = Distance travelled / Time taken.	Velocity = Displacement / Time taken.

15. Match

- 1) Density - $\frac{\text{mass}}{\text{volume}}$
- 2) Pascal's law - Pressure
- 3) Pressure exerted by a fluid - $h\rho g$
- 4) Lactometer - Milk

16.

- 1) Lemonade - It is made up of lemon juice, sugar and water.
- 2) Air - It is a mixture of Carbon dioxide, Oxygen, Nitrogen, water vapour and other gases.

17.

a) 18th

b) Mercury

18.

In phylum Coelenterata mouth surrounded by short tentacles. The tentacles bear stinging cells called unidblast or nematocyst.

19.

a) True

b) False

Reason: xylem is made up of tracheids.

20.

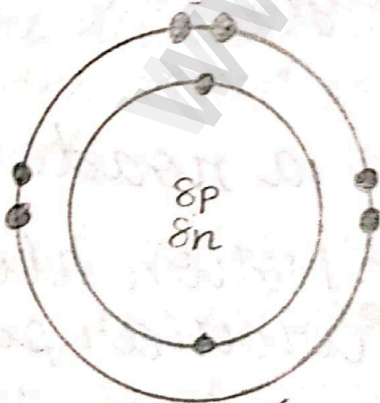


21.

To view a slide show,

- i) Click the slide show tab on the Ribbon
- ii) Click from Beginning from the start slide show group.

22.

Atom of oxygen $^{16}_8\text{O}$ 

Electronic config. 2, 6
Valency = 2

III

Answer the following

23.

Mass	Weight
It is a fundamental quantity.	It is a derived quantity.
It has magnitude alone - scalar quantity.	It has magnitude and direction - vector quantity.
It is the amount of matter contained in a body.	It is the normal force exerted by the surface on the object against gravitational pull.
Remains the same everywhere.	Varies from place to place.
It is measured using physical balance.	It is measured using spring balance.
Its unit is kilogram	Its unit is newton.

24.

In physics, motion can be classified as

Linear motion : Motion along a straight line.

~~Circular motion~~

Eg. Car moving on a road.

Circular motion : Motion along a circular path.

Eg. Earth revolving.

Oscillatory motion: Repetitive to and fro motion of the object at regular interval of time

Eg. Motion of a pendulum clock

Random motion: Motion of the object which does not fall in any of the above categories.

Eg. Motion of a bee, people walking in a crowded street.

25.

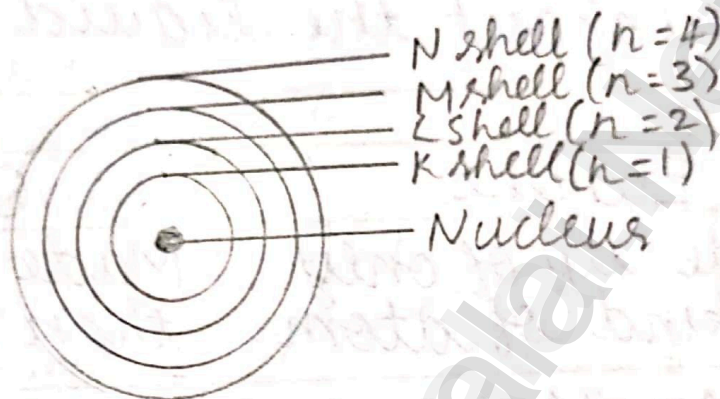
- i) Helium is much less denser than ordinary air which gives them buoyancy and thus float in air.
- ii) Pascal's law states that the external pressure applied on an incompressible liquid is transmitted uniformly throughout the liquid.

26.

Element	Compound
Made up of only one kind of atom.	Made up of more than one kind of atom.
The smallest particle that retains all its properties is an atom.	The smallest particle that retains all its properties is the molecule.
Cannot be broken down into simpler substances.	Can be broken down into elements by chemical methods.
Eg. Tap water	Eg. Sugar Cane

27. i) In atoms, the electron revolve around the nucleus in stationary circular paths called orbits or shells or energy levels.
- ii) While revolving around the nucleus in an orbit, an electron neither loses nor gains energy.

- iii) An electron in a shell can move to a higher or lower energy shell by absorbing or releasing a fixed amount of energy.
- iv) The orbits or shells are represented by the letters K, L, M, N... or the numbers $n = 1, 2, 3, 4, \dots$



- 28.
- * All the elements are arranged in the increasing order of their atomic number.
 - * The horizontal rows are called periods. There are seven periods in the periodic table.
 - * The elements are placed in periods based on the number of shells in their atoms.
 - * Based on the physical and chemical properties of elements, they are grouped into various families.

29.

- i) These are bilaterally symmetrical, triploblastic, first true coelomate animals with organ-system grade of organization.
- ii) Body is externally divided into segments, called metameres joined by ring like structures, called annuli.
- iii) It is covered by moist thin cuticle. Setae and parapodia are locomotor organs.
- iv) Sexes may be separate or united.
- v) eg - Nereis, Earthworm, Leech.

30. The types of meristems based on position,
 Apical meristem: These are found at the apices or growing points of root and shoot and bring about increase in length.

Intercalary meristem: It lies between the region of permanent tissues and is part of primary meristem. It is found either at the base of leaf (eg - pinus) or at the base of internodes (eg. grasses)

Lateral meristem: These are arranged parallel and causes the thickness of the plant part.

31

Tropic movement	Nastic movement
Unidirectional response to light stimulus.	Non-directional response to light stimulus.
Growth dependent movements.	Growth independent movements.
More or less permanent and irreversible.	Temporary and reversible.
Found in all plants	Found only in a few specialised plants.
Slow action	Immediate action.

32.
ii)

K - 2, 8, 8, 1

A - 2, 8, 7

IV

Answer in detail

33.
a)

i)

i) The units named after scientists are not written with a capital initial letter.
Eg. newton, henry, ampere and watt.

ii)

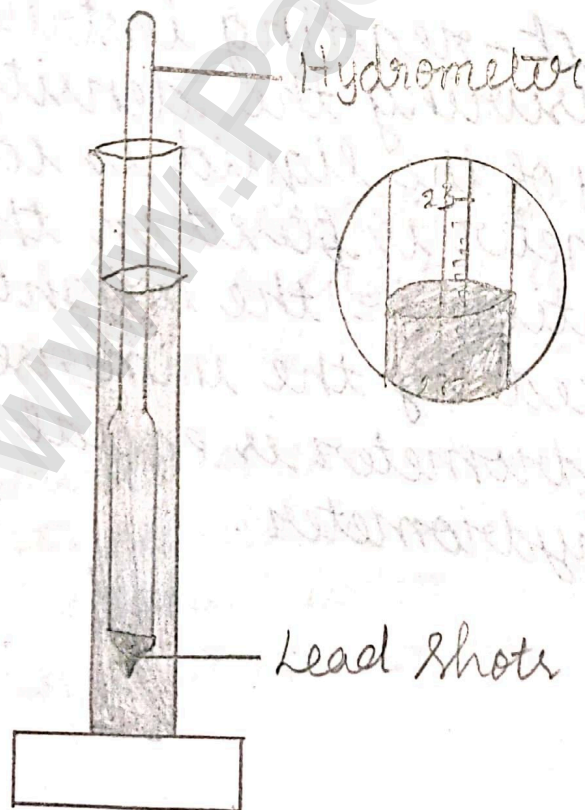
ii) The symbols of the units named after scientists should be written by the initial capital letter. Eg. N for newton, H for henry, A for ampere and W for watt.

iii) iv) v)	<p>Small letters are used as symbols for units not derived from a proper noun. Eg. m for metre, kg for kilogram.</p> <p>No full stop or other punctuation marks should be used within or at the end of symbols. Eg. 50m and not as 50m.</p> <p>The symbols of the units are not expressed in plural form. Eg. 10kg not as 10 kgs</p>
ii) a) b)	<p>length</p> <p>Vernier Caliper</p>
b)	<p>Hydrometer</p> <p>A direct-reading instrument used for measuring the density or relative density of the liquid is called hydrometer. Hydrometer is based on the principle of flotation. i.e., the weight of the liquid displaced by the immersed portion of the hydrometer is equal to the weight of the hydrometer.</p>

Hydrometer consists of a cylindrical stem having a spherical bulb at its ~~upper~~ lower end and a narrow tube at its upper end. The lower spherical bulb is partially filled with lead shots or mercury. This helps hydrometer to float or stand vertically in liquids.

The narrow tube has markings so that relative density of a liquid can be read directly.

The liquid to be tested is poured into the glass jar. The hydrometer is gently lowered into the liquid until it floats freely. The reading against the level of liquid touching the tube gives the relative density of the liquid.



Hydrometer

34. Brownian movement

a)

i) When colloidal solution are viewed under powerful microscope, it can be seen that colloidal particles are moving constantly and rapidly in zig-zag directions.

ii) The Brownian movement of colloidal particles is due to the unbalanced bombardment of the particles by the molecules of dispersion medium.



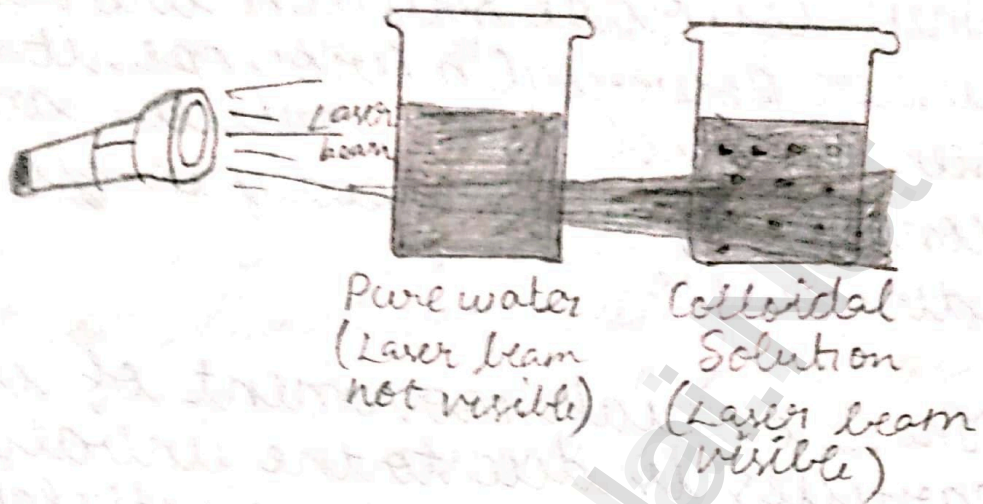
Brownian movement

Tyndall effect

i) Tyndall (1869) observed that when a strong beam of light is focused on a colloidal solution the path of the beam becomes visible.

ii) The phenomenon is known as Tyndall effect and the illuminated path is called Tyndall cone

iii) This phenomenon is not observed in case of true solution.



Tyndall effect

b) i)

The chemical and physical properties of the elements are ~~arranged in~~ the ~~increasing~~ periodic functions of their atomic numbers.

ii)

i) The horizontal rows in the periodic table ~~in the~~ are called periods

ii) Vertical columns in the periodic table starting from top to bottom are called groups.

- 35.
- i) Arthropoda is the largest phylum of the animal kingdom.
 - ii) They are bilaterally symmetrical, triploblastic and coelomate animals.
 - iii) The body is divisible into head, thorax and abdomen.
 - iv) Each thoracic segment bears paired jointed legs.
 - v) Exoskeleton is made of chitin.
 - vi) Body cavity is filled with haemolymph.
 - vii) Respiration is through body surface, gills.
 - viii) Excretion occurs by green glands.
 - ix) Sexes are separate.
 - x) E.g - Prawn, Crab.

ii) Match

- a) Coelenterata - Hydra
- b) Platyhelminthes - Tape worm
- c) Echinodermata - Star fish
- d) Mollusca - Snail

b) i)	Mitosis	Meiosis
	Occurs in somatic cells.	Occurs in reproductive cells.
	Involved in growth and occurs continuously throughout life	Involved in gamete formation only during reproductively active age.
	Consists of single division.	Consists of two divisions
	Two diploid daughter cells are formed.	Four haploid daughter cells are formed.
	The chromosome number in daughter cell is similar to the parent cell ($2n$).	The chromosome number in the daughter cell is just half (n) of the parent cell.
	Identical daughter cells are formed.	Daughter cells are not similar to the parent cell and are randomly assorted.

- ii) The three types of cell division are,
- I Amitosis - Direct Division
 - II Mitosis - Indirect Division
 - III Meiosis - Reduction Division