

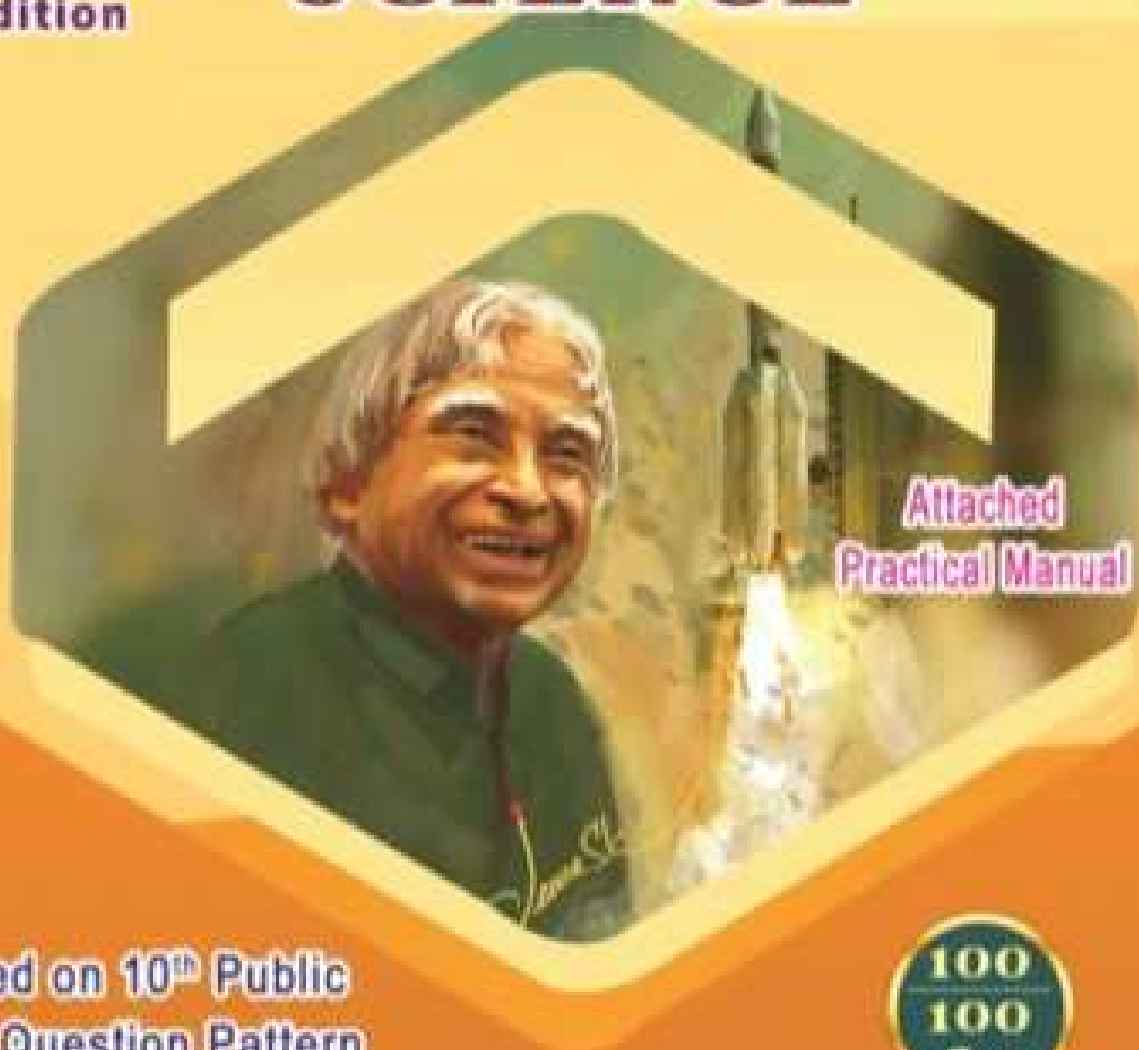
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Revised
Edition

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UNNAI MUDIYUM

SCIENCE



Attached
Practical Manual

Based on 10th Public
Exam Question Pattern

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**ஆர்டர்களுக்கு மாவட்ட வாரியாக எங்கள்
நிர்வாக எண்களை தொடர்பு கொள்ளவும்.**

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Main Book

RS. 153

Preface

Welcome to Dolphins Science Notes !

This compilation is designed to serve as a comprehensive resource for students, educators and enthusiasts alike who are eager to explore the wonders of science. This guide has been meticulously crafted to provide clarity, insight and a deeper understanding of various scientific concepts across different disciplines. Whether you're delving into physics, chemistry, biology and computer science or any other branch of science, I hope this guide will serve as a valuable companion on your journey of discovery. Enjoy the exploration!

Salient features :

- * **Book back solutions**
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UNIT

1

MEASUREMENT

 Learning Objectives


After completing this lesson, students will be able to

- understand the fundamental and derived quantities and their units.
- know the rules to be followed while expressing physical quantities in SI units.
- get familiar with the usage of scientific notations.
- know the characteristics of measuring instruments.
- use Vernier caliper and screw gauge for small measurements.
- find the weight of an object using a spring balance.
- know the importance of accurate measurements.



Textbook Exercises

PAGE - 11

I. CHOOSE THE CORRECT ANSWER

1. Choose the correct one.

- | | | |
|---|---|--|
| a) $\text{mm} < \text{cm} < \text{m} < \text{km}$ | b) $\text{mm} > \text{cm} > \text{m} > \text{km}$ | |
| c) $\text{km} < \text{m} < \text{cm} < \text{mm}$ | d) $\text{mm} > \text{m} > \text{cm} > \text{km}$ | [a] $\text{mm} < \text{cm} < \text{m} < \text{km}$ |

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

- | | | | | |
|---------|-----------|---------|-----------|------------|
| a) mass | b) weight | c) time | d) length | [d] length |
|---------|-----------|---------|-----------|------------|

3. 1 metric ton is equal to

- | | | | | |
|-----------------|----------------|------------------|--------------------|------------------|
| a) 100 quintals | b) 10 quintals | c) 1/10 quintals | d). 1/100 quintals | |
| | | | | [b] 10 quintals] |

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

- a) Spring balance b) Beam balance c) Physical balance d) Digital balance

[a) Spring balance]

II. FILL IN THE BLANKS

1. Metre is the unit of _____ [Length]
2. 1 kg of rice is weighed by _____ [Common beam balance]
3. Thickness of a cricket ball is measured by _____ [vernier caliper]
4. Radius of a thin wire is measured by _____ [screw gauge]
5. A physical balance measures small differences in mass up to _____ [1 milligram]

iii. State whether true or false. If false, CORRECT THE STATEMENT.

1. The SI unit of electric current is kilogram.

Ans : **False.**

Correct Statement : The Si unit of electric current is **ampere**

2. Kilometre is one of the SI units of measurement.

Ans : **False.**

Correct Statement : **Metre** is one of the SI units of measurement

3. In everyday life, we use the term weight instead of mass.

Ans : **True**

4. A physical balance is more sensitive than a beam balance.

Ans : **True**

5. One Celsius degree is an interval of 1K and zero degree Celsius is 273.15 K.

Ans : **True**

6. With the help of Vernier caliper we can have an accuracy of 0.1 mm and with screw gauge we can have an accuracy of 0.01 mm.

Ans : **True**

IV. Match the Following

	Column - I	Column - II	Answer
1	Length	a) Kelvin	b) metre
2	Mass	b) metre	c) Kilogram
3	Time	c) kilogram	d) Second
4	Temperature	d) Second	a) Kelvin

	Column - I	Column - I	Answer
1	Screw gauge	a) Vegetables	b) coins
2	Vernier caliper	b) Coins	d) cricket ball
3	Beam balance	c) Gold ornaments	a) vegetables
4	Digital balance	d) Cricket ball	c) Gold ornaments

V. ASSERTION AND REASON TYPE QUESTIONS.

Mark the correct answer as:

- Both A and R are true but R is not the correct reason.
- Both A and R are true and R is the correct reason.
- A is true but R is false.
- A is false but R is true.

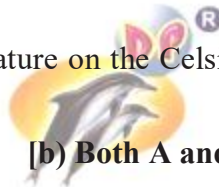
1. **Assertion (A)** : The scientifically correct expression is “ The mass of the bag is 10 kg”

Reason (R) : 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]

2. **Assertion (A)** : $0\text{ }^{\circ}\text{C} = 273.16\text{ K}$. For our convenience we take it as 273 K after rounding off the decimal.

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



[b] Both A and R are true and R is the correct reason]

3. **Assertion (A)** : Distance between two celestial bodies is measured in terms of light year.

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

[b] Both A and R are true and R is the correct reason]

VI. Answer Very briefly

1. **Define measurement.**

- It is defined as the determination of the size or magnitude of a quantity.

2. **Define standard unit.**

- It is defined as a specific magnitude of a physical quantity that has been adopted by law or convention.

3. **What is the full form of SI system?**

- International System of Units is the full form of SI system.

4. **Define least count of any device.**

- The smallest length which can be measured by metre scale is called least count.

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

- The distance moved by the tip of the screw for one complete rotation of the head. It is equal to 1 mm in typical screw gauges.

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

- We can't find the diameter of a thin wire using the ruler from our instrument box.

VII. Answer briefly**1. Write the rules that are followed in writing the symbols of units in SI system.**

- The units named after scientists are not written with a capital initial letter. E.g. newton, henry.
- The symbols of the units named after scientists should be written by the initial capital letter. E.g. N for newton, H for henry.
- Small letters are used as symbols for units not derived from a proper noun. E.g. m for metre, kg for kilogram.
- No full stop or other punctuation marks should be used within or at the end of symbols.
Eg. 50m and not as 50 m.
- The symbols of the units are not expressed in plural form. **Eg.** 10 kg not as 10 kgs.

2. Write the need of a standard unit.

- Earlier, different unit systems were used by people from different countries.
- Standard unit is convenient to use by everyone, everywhere.
- We need standard unit to measure the quantities accurately.

3. Differentiate mass and weight.

Sl. No.	Mass	Weight
1.	It is a fundamental quantity	It is a derived quantity
2.	It is a scalar quantity	It is a vector quantity
3.	Remains the same everywhere	Varies from place to place
4.	It is measured using physical balance	It is measured using spring balance
5.	Its unit is kilogram	Its unit is newton.

4. How will you measure the least count of Vernier caliper?

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

$$L.C = \frac{\text{Value of one main scale division}}{\text{Total number of vernier scale division}}$$

$$L.C = \frac{1 \text{ mm}}{10} \\ = \mathbf{0.1 \text{ mm}}$$

VIII. Answer in detail

1. Explain a method to find the thickness of a hollow tea cup.

- The Pitch, Least count and the type of zero error of the screw gauge are determined.
- The given cup is placed in between two studs.
- The head screw using the ratchet arrangement is freely rotated until the given cup is held firmly, but not tightly.
- Pitch scale reading (PSR) by the head scale and head scale coincidence (HSC) with the axis of the pitch scale, are found.
- The readings are recorded and the experiment for different positions of the given cup is repeated.
- The thickness of the cup is calculated using the formula $P.S.R + (HSC \times L.C)$
- Then the average of the last column of the table is found.
- Hence the thickness of a hollow tea cup = _____ mm.

2. How will you find the thickness of a one rupee coin?

- The Pitch, Least count and the type of zero error of the screw gauge are determined.
- The given coin is placed in between two studs.
- The head screw using the ratchet arrangement is freely rotated until given one rupee coin is held firmly, but not tightly.
- Pitch scale reading (PSR) by the head scale and head scale coincidence (HSC) with are axis of the pitch scale are found.
- The reading are recorded and the experiment for different positions of the given coin is repeated.
- The thickness of the coin is computed using the formula $P.S.R + (HSC \times L.C)$
- Then the average of the last column of the table is found.

S.no	P.S.R (mm)	HSC (division)	CHSC = HSC \pm ZC (division)	CHSR = CHSC \times LC(mm)	Total Reading = PSR + CHSR(mm)
1.					
2.					
3.					

IX. Numerical problems

1. Inian and Ezhilan argue about the light year. Inian tells that it is 9.46×10^{15} m and Ezhilan argues that it is 9.46×10^{12} km. Who is right? Justify your answer.

Solution:

Inian is correct

Light travels 3×10^8 m in one second or 3 Lakhs kilometre in one second.

In one year we have 365 days.

The total number of second in one year is equal to $365 \times 24 \times 60 \times 60$

Distance travelled by light in 1 year = $(3.153 \times 10^7) \times (3 \times 10^8) = 9.46 \times 10^{15}$ m.

2. The main scale reading while measuring the thickness of a rubber ball using Vernier caliper is 7 cm and the Vernier scale coincidence is 6. Find the radius of the ball.

Solution:

$$\text{MSR} = 7 \text{ cm}$$

$$\text{VC} = 6 \text{ cm}$$

$$\text{LC} = 0.1 \text{ mm} = 0.01 \text{ cm}$$

$$\text{Diameter} = \text{DR} = \text{MSR} + (\text{VC} \times \text{LC}) = 7 + 0.06 \text{ cm}$$

$$\text{Diameter D} = 7.06 \text{ cm}$$

$$\text{Radius R} = (D/2) = (7.06/2) = 0.0353 \text{ m}$$

$$\text{The radius of the ball} = 0.0353 \text{ m.}$$

3. Find the thickness of a five rupee coin with the screw gauge, if the pitch scale reading is 1 mm and its head scale coincidence is 68.

Solution :

$$\text{PSR} = 1 \text{ mm} = 1 \times 10^{-3} \text{ m}$$

$$\text{HSC} = 68 \text{ cm}$$

$$\text{LC} = 0.01 \text{ mm} = 0.01 \times 10^{-3} \text{ m}$$

$$\text{Total reading} = \text{PSR} + (\text{HSC} \times \text{LC})$$

$$\therefore \text{Thickness of the five rupee coin} = 1 \times 10^{-3} + (68 \times 0.01 \times 10^{-3}) \text{ m}$$

$$\therefore \text{Thickness of the five rupee coin} = 1.68 \times 10^{-3} = 1.68 \text{ mm}$$

4. Find the mass of an object weighing 98 N.

Solution:

$$W = mg$$

$$W = 98 \text{ N}$$

$$g = 9.8 \text{ ms}^{-2}$$

$$m = W/g$$

$$= (98/9.8)$$

$$= 10 \text{ kg.}$$

UNIT
10**MATTER AROUND US** **Learning Objectives**

After completing this lesson, students will be able to

- classify substances as elements, compounds and mixtures based on their chemical composition.
- group mixtures as homogeneous and heterogeneous.
- identify suitable method to separate components of a mixture.
- classify solutions based on the size of the solute particles and compare the true solutions, colloids and suspensions based on their properties.
- differentiate colloids based on the nature of dispersed phase and dispersion medium.
- compare o/w and w/o emulsions.
- discuss some important examples and uses of colloids.

**Textbook Exercises****PAGE - 123****I. CHOOSE THE CORRECT ANSWER**

1. The separation of denser particles from lighter particles done by rotation at high speed is called _____
a) Filtration b) centrifugation c) decantation d) centrifugation
[b) centrifugation]

2. Among the following _____ is a mixture
a) Common Salt b) Juice c) Carbon dioxide d) Pure Silver **[b) Juice]**

3. When we mix a drop of ink in water we get a _____
a) Heterogeneous Mixture b) Compound
c) Homogeneous Mixture d) Suspension **[c) Homogeneous Mixture]**

4. _____ is essential to perform separation by solvent extraction method.
a) Separating funnel b) filter paper
b) centrifuge machine d) sieve **[a) Separating funnel]**

5. _____ has the same properties throughout the sample

- a) Pure substance b) Mixture c) Colloid d) Suspension

[a) Pure substance]

II. STATE WHETHER TRUE OR FALSE. IF FALSE, CORRECT THE STATEMENT.

1. Oil and water are immiscible with each other.

Ans : True.

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

Ans : False

Correct Statement : A compound **can be** broken into simpler substances chemically.

3. Liquid – liquid colloids are called gel.

Ans : False

Correct Statement : Liquid – **solid** colloids are called gel.

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

Correct Statement : Aspirin is composed of 60% Carbon, 4.5% Hydrogen and 35.5% Oxygen by mass. Aspirin is a **compound**.

III. MATCH THE FOLLOWING

	Column - I		Column - I
1	Element	a.	Settles down on standing
2	Compound	b.	Impure substance
3	Colloid	c.	Made up of molecules
4	Suspension	d.	Pure substance
5	Mixture	e.	Made up of atoms

Answer
d. Pure substance
e. Made up of atoms
c. Made up of molecules
a. Settles down on standing
b. Impure substance

IV. FILL IN THE BLANKS

1. A _____ mixture has no distinguishable boundary between its components.

[homogeneous]

2. An example of a substance that sublimates is _____

[camphor]

3. Alcohol can be separated from water by _____ [fractional distillation]
 4. In petroleum refining, the method of separation used is _____ [fractional distillation]
 5. Chromatography is based on the principle of _____
 [different solubilities in the same solvent]

V. ANSWER VERY BRIEFLY

1. Differentiate between absorption and adsorption

S.No.	Absorption	Adsorption
1.	It is the process in which the substance is uniformly distributed throughout the bulk of another substance.	It is the process in which the particles of a substance is concentrated only at the surface of another substance.

2. Define sublimation.

- Certain solid substances when heated change directly from solid to gaseous state without attaining liquid state. The vapours when cooled give back the solid substance. This process is known as sublimation.

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

- The Dettol formulation is a stabilised micro-emulsion. It is manufactured using Chloroxylenol 4.8% and the rest made up by pine oil, isopropanol, castor oil, and soap. On dilution with water, the micro-emulsion destabilises releasing the pine oil and castor oil as a visible bloom. That is why the mixture turns turbid.

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

i) miscible liquids:

Distillation flask, fractionating column.

(ii) immiscible liquids:

Separating funnel

5. Name the components in each of the following mixtures.

i. Ice cream ii. Lemonade iii. Air iv. Soil

- (i) Ice cream, is a mixture of cream, milk, sugar & sometimes egg.
 (ii) Lemonade is a mixture of lemon juice, sugar and water.
 (iii) Air is a mixture of Hydrogen, oxygen, carbon-di-oxide and other gases.
 (iv) Soil is a mixture of clay, sand, silt and various salts.

VI. ANSWER BRIEFLY

1. Which of the following are pure substances? Ice, Milk, Iron, Hydrochloric acid, Mercury, Brick and Water.

The following are pure substances.

- Ice,
- Iron,
- Hydrochloric acid,
- mercury,
- brick,
- water.

2. Oxygen is very essential for us to live. It forms 21% of air by volume. Is it an element or compound?

- Oxygen is an element.

3. You have just won a medal made of 22-carat gold. Have you just procured a pure substance or impure substance?

- It is a mixture - so it is impure substance.



4. How will you separate a mixture containing saw dust, naphthalene and iron filings?

- The iron filings in the mixture can be separated by Magnetic separation and Naphthalene by sublimation. Saw dust will be remaining at the bottom.

5. How are homogeneous solutions different from heterogeneous solution? Explain with examples.

S.No.	Homogenous solution	Heterogeneous
1.	Components are uniformly mixed and it will have single phase.	Components are not uniformly mixed and it will have more than single phase. They are called suspensions
2.	No boundaries of separation between the components	There are visible boundaries between the components
3.	Components are not visible to naked eye.	Components are visible to naked eye.
4.	Example: Alloys, salt solution, lemonade, petrol etc.	Example: chalk in water, petrol in water, sand in water, etc.

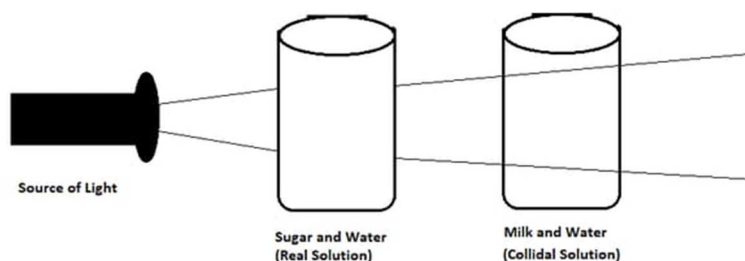
VII. ANSWER IN DETAIL

1. Write the differences between elements and compounds and give an example for each.

S.No.	Elements	Compounds
1.	Made up of only one kind of atom.	Made up of more than one kind of atom
2.	The smallest particle that retains all its properties is an atom.	The smallest particle that retains all its properties is the molecule.
3.	Cannot be broken down into simpler substances.	Can be broken down into elements by chemical methods
4.	Example: Copper (Cu), Silicon (Si), Gold (Ag).	Example: Water (H ₂ O), Carbon dioxide (CO ₂), Ammonia (NH ₃).

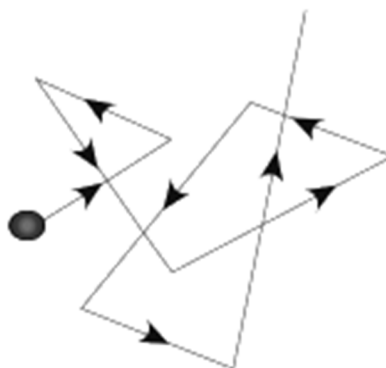
2. Explain Tyndall effect and Brownian movement with suitable diagram.

Tyndall effect



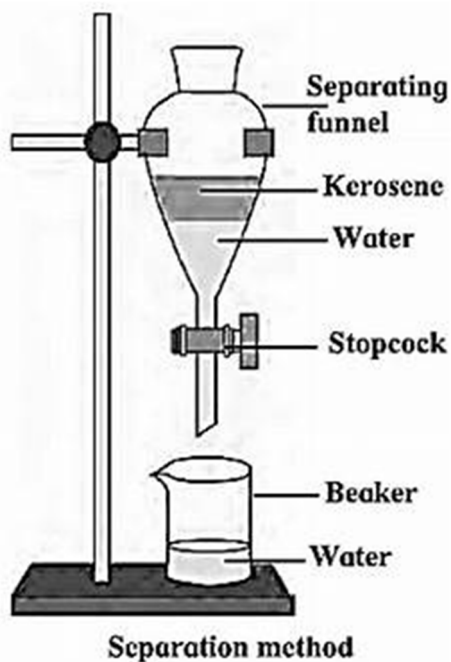
- Tyndall (1869) observed that when a strong beam of light is focused on a colloidal solution, the path of the beam becomes visible.
- This phenomenon is known as Tyndall effect and the illuminated path is called Tyndall cone.
- This phenomenon is not observed in case of true solution.
- This phenomenon is due to scattering of light by colloidal particles.

Brownian movement



- Brownian movement is a kinetic property. When colloidal solution are viewed under powerful microscope, it can be seen that colloidal particles are moving constantly and rapidly in zig-zag directions.
- The Brownian movement of colloidal particles is due to the unbalanced bombardment of the particles by the molecules of dispersion medium.

3. How is a mixture of common salt, oil and water separated? You can use a combination of different methods.



- The mixture is taken in a separating funnel., whose mouth is kept closed.
- Oil and water are immiscible liquids
- As common salt can dissolve in water it settles as a separate layer at the bottom of oil layer in the separating funnel.
- Place a beaker below the funnel to collect salt solution.
- Open the tap. Allow the salt solution alone to collect in the beaker.
- From the salt solution, common salt is obtained from evaporation.

UNIT

17

ANIMAL KINGDOM

 Learning Objectives


After completing this lesson, students will be able to:

- understand the classification of animal kingdom.
- identify and study the different groups of animals.
- list out the general characteristics of animals based on grades of organization, types of symmetry, coelom and various body activity.
- recognize that binomial classification has Latin and Greek words.
- identify the first name as genus and second name as species.
- recall the salient features of each phylum.



Textbook Exercises

PAGE - 208

I. CHOOSE THE CORRECT ANSWER

1. Find the group having only marine members.

- a) Mollusca b) Coelenterata c) Echinodermata d) Porifera

[c] Echinodermata]

2. Mesoglea is present in

- a) Porifera b) Coelenterata c) Annelida d) Arthropoda

[b] Coelenterata]

3. 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

[c] Aves and Mammals]

4. Identify the animal having four chambered heart.

- a) Lizard b) Snake c) Crocodile d) Calotes [c) Crocodile]

5. The animal without skull is

- a) Acrania b) Acephalia c) Apterina d) Acoelomate

[a) Acrania]

6. Hermaphrodite organisms are

- a) Hydra, Tape worm, Earthworm, Amphioxus
 b) Hydra, Tape worm, Earthworm, Ascidian
 c) Hydra, Tape worm, Earthworm, Balanoglossus d) Hydra, Tape worm, Ascaris, Earthworm

[b) Hydra, Tape worm, Earthworm, Ascidian]

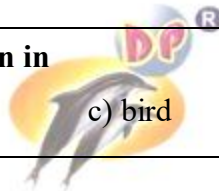
7. Poikilothermic organisms are

- a) Fish, Frog, Lizard, Man b) Fish, Frog, Lizard, Cow
 c) Fish, Frog, Lizard, Snake d) Fish, Frog, Lizard, Crow

[c) Fish, Frog, Lizard, Snake]

8. Air sacs and Pneumatic bones are seen in

- a) fish b) frog c) bird d) bat [c) bird]

**9. Excretory organ of tape worm is**

- a) flame cells b) nephridia c) body surface d) solenocytes

[a) flame cells]

10. Water vascular system is found in

- a) Hydra b) Earthworm c) Star fish d) Ascaris [c) Star fish]

II. FILL IN THE BLANKS

1. The skeletal framework of Porifera is _____. [spicules]
2. Ctenidia are respiratory organs in _____. [phylum mollusca]
3. Skates are _____ fishes. [cartilaginous]
4. The larvae of an amphibian is _____. [tadpole]
5. _____ are jawless vertebrates. [Cyclostomes]
6. _____ is the unique characteristic feature of mammal. [Placenta]
7. Spiny anteater is an example for _____ mammal. [egg laying]

III. STATE WHETHER TRUE OR FALSE. IF FALSE, CORRECT THE STATEMENT.

1. Canal system is seen in coelenterates.

Ans : **False**

Correct Statement : Canal system is seen in **porifera**.

2. Hermaphrodite animals have both male and female sex organs.

Ans : **True**

3. Trachea are the respiratory organ of Annelida.

Ans : **False**

Correct Statement : Trachea are the respiratory organ of **Arthropoda**.

4. Bipinnaria is the larva of Mollusca.

Ans : **False**

Correct Statement : Bipinnaria is the larva of **Echinodermata**.

5. Balanoglossus is a ciliary feeder.

Ans : **True**

6. Fishes have two chambered heart.

Ans : **True**



7. Skin of reptilians are smooth and moist.

Ans : **False**

Correct Statement : Skin of **Amphibians** are smooth and moist

8. Wings of birds are the modified forelimbs.

Ans : **True**

9. Female mammals have mammary glands.

Ans : **True**

IV. MATCH THE FOLLOWING

	Column – I		Column - II
1	Coelenterata	a.	Snail
2	Platyhelminthes	b.	Starfish
3	Echinodermata	c.	Tapeworm
4	Mollusca	d.	Hydra

Answer	
d.	Hydra
c.	Tapeworm
b.	Starfish
a.	Snail

V. ANSWER VERY BRIEFLY**1. Define taxonomy.**

- Taxonomy is the science of classification which makes the study of wide variety of organisms easier. It helps us to understand the relationship among different group of animals.

2. What is nematocyst?

- In Phylum coelenterata organisms the tentacles bear stinging cells called cnidoblast or nematocyst.

3. Why coelenterates are called diploblastic animals.

- The body wall of coelenterates is diploblastic with two layers. Due to presence of two layers in body wall, they are said to be diploblastic animals.

4. List the respiratory organs of amphibians.

- Respiration is through by gills, skin, buccopharynx and lungs.

5. How does locomotion take place in starfish?

- Locomotion in starfish takes place by tube feet.

6. Are jellyfish and starfish similar to fishes? If no justify the answer.

- No, jellyfish and starfish are not similar to fishes.
- Jelly fish is a coelenterate. Their bodies are made of calcium carbonate.
- Starfish fish is an echinoderm.
- Jelly fish and star fish are invertebrates.
- Fishes are vertebrates.

7. Why are frogs said to be amphibians?

- They are the first vertebrates to live on land with dual adaptation to live in aquatic and land environments. Hence frogs are said to be amphibians.

VI. ANSWER BRIEFLY**1. Give an account on phylum Annelida.**

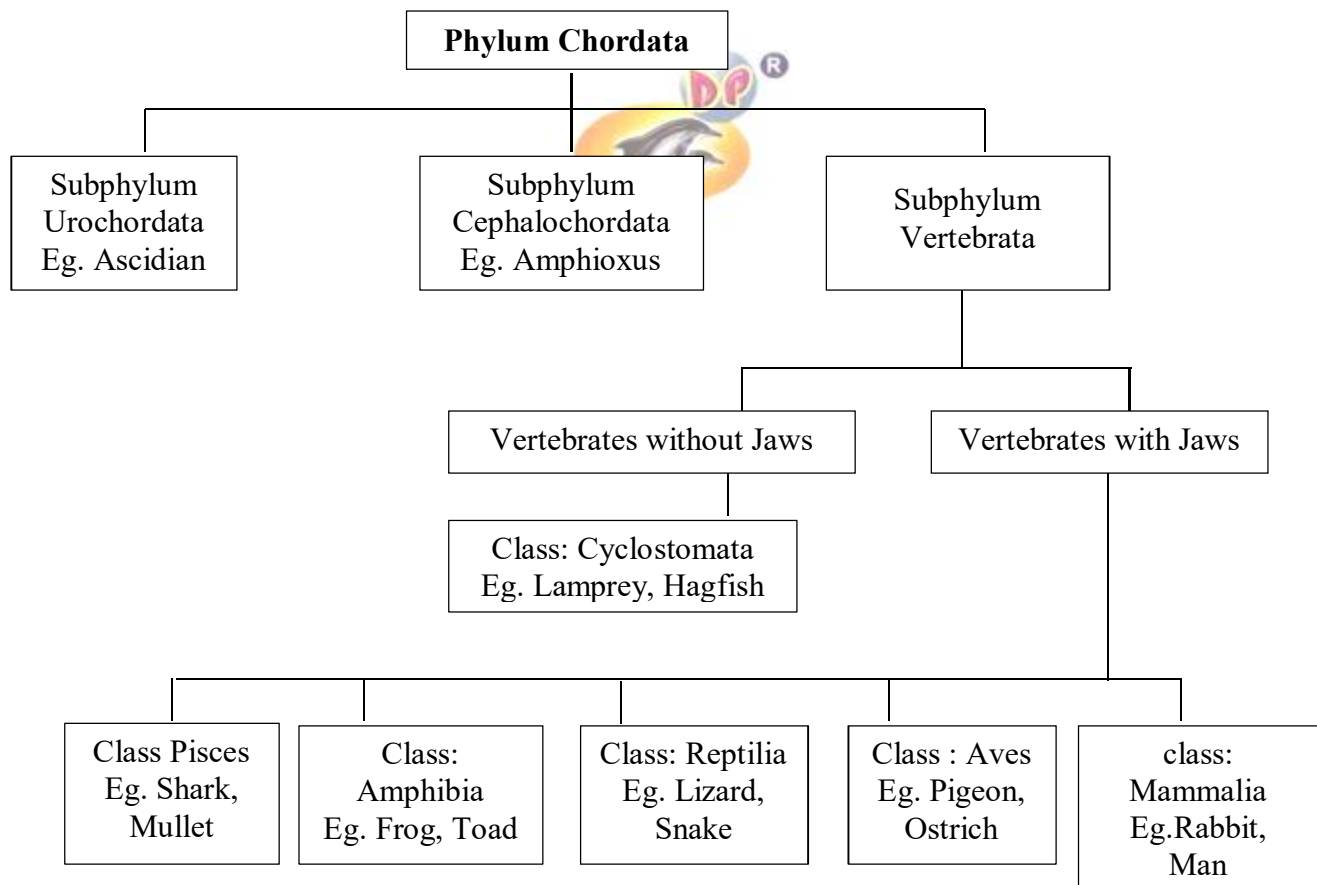
- These are bilaterally symmetrical, triploblastic, first true coelomate animals with organ-system grade of organization.
- Body is externally divided into segments called metameres joined by ring like structures called annuli.
- It is covered by moist thin cuticle.
- Setae and parapodia are locomotor organs.
- e.g- Nereis, Earthworm, Leech.

2. Differentiate between flat worms and round worms?

S.No.	Flat worms	Round worms
1.	They belong to Phylum Platyhelminthes.	They belong to Phylum Aschelminthes.
2.	They are mostly parasitic.	Exist as free - living soil forms or as parasites.
3.	Mostly hermaphrodites.	Sexual dimorphism is seen.
4.	They are acoelomate organisms.	They are pseudocoelomate organisms.
5.	Example: Tapeworm	Example: Round worms

3. Outline the flow charts of Phylum Chordata.

Classification of Phylum Chordata



4. List five characteristic features of fishes.

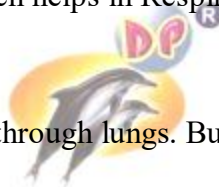
- Fishes are poikilothermic (cold-blooded), aquatic vertebrates with jaws.
 - The streamlined body is divisible into head, trunk and tail.
 - Locomotion is by paired and median fins.
 - The body has a covering of scales.
 - Respiration is through gills.
-

5. Comment on the aquatic and terrestrial habits of amphibians.**Aquatic habits of amphibians:**

- The larva of amphibians (tadpole) lives in water and breathes with gills.
- External fertilization occurs in frog with water as a medium of fertilization.
- The adult frog has webbed feet to swim in water.
- The skin is moist and glandular which helps in Respiration.

Terrestrial habits of amphibians:

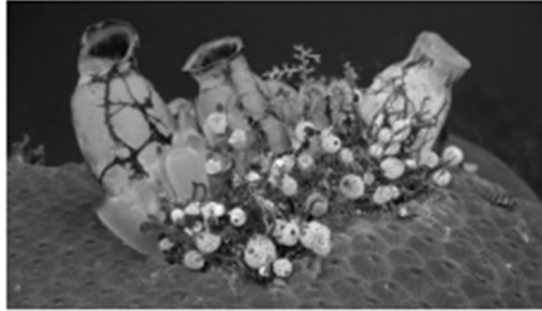
- The adults live on land and breathe through lungs. Bucco-pharynx also helps in Respiration.
 - The fore limbs are short and help to hop on land.
-

**6. How are the limbs of the birds adapted for avian life?**

- Forelimbs of birds are modified into wings with feathers for flight.
 - The hind limbs are adapted for walking perching or swimming.
-

VII. ANSWER IN DETAIL**1. Describe the characteristic features of different Prochordates.****Prochordata:**

- The prochordates are considered as the forerunners of vertebrates.
 - Based on the nature of the notochord, prochordata is classified into subphylum Urochordata and subphylum Cephalochordata.
-

Subphylum Urochordata:

- Notochord is present only in the tail region of free-living larva.
- Adults are sessile forms and mostly degenerate.
- The body is covered with a tunic or test.
- E.g. Ascidian

Subphylum Cephalochordata:

- Cephalochordates are small fish like marine chordates with unpaired dorsal fins.
- The notochord extends throughout the entire length of the body.
- E.g. Amphioxus

2. Give an account on phylum Arthropoda.

- Arthropoda is the largest phylum of the animal kingdom.
- They are bilaterally symmetrical, triploblastic and coelomate animals.
- The body is divisible into head, thorax and abdomen.
- Each thoracic segment bears paired jointed legs.
- Exoskeleton is made of chitin and is shed periodically as the animal grows.
- The casting off and regrowing of exoskeleton is called moulting.
- Body cavity is filled with haemolymph (blood).
- The blood does not flow in blood vessels and circulates throughout the body (open circulatory system).
- Respiration is through body surface, gills or tracheae (air tubes).
- Excretion occurs by malpighian tubules or green glands. Sexes are separate.
- E.g., Prawn, Crab, Cockroach, Millipedes, Centipede, Spider, Scorpion.

UNIT

25

LibreOffice Impress



Learning Objectives

After the completion of this lesson, students will be able to:

- define presentation.
- create a new presentation.
- insert text box, images, audio and video files.
- insert and delete a slide.
- view a slide show.



Textbook Exercises

PAGE - 308

I. CHOOSE THE CORRECT ANSWER

1. _____ is a structured delivery of information.
a) Slide Show b) Page c) WordArt d) Presentation
[d] Presentation]

2. The slides are grouped together in a sequence to form _____.
a) slide show b) sharts c) page d) messages [a] slide show]

3. A presentation consists of many _____.
a) pages b) slides c) placeholders d) messages [b] slides]

4. Which key should be pressed to run a slide show ?
a) F1 b) Tab c) F5 d) F2 [c] F5]

5. _____ is used to insert attractive text in the slide.
a) Slide Show b) Word Art c) Text d) Header and Footer
[c] Text]

V. ANSWER BRIEFLY**1. What is Libre Office Impress?**

- Libre Office Impress is a software that is used to create a presentation with text effect, graphics and sound to make it interesting and effective for the audience.

2. What is a Presentation?

- A presentation is a structured delivery of information. It is a systematic display of information along with graphics, movies, sounds etc.

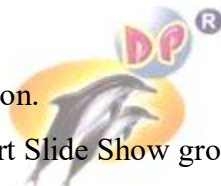
3. What is a Slide?

- A slide is a single page of a presentation. Collectively, a group of slides may be known as a slide deck. In the digital age, a slide most commonly refers to a single page developed using a presentation program such as Microsoft PowerPoint, Apple keynote, Apache Open Office or Libre Office.

4. Write the steps to view a Slide Show.

Steps to view a Slide show

- Click the slide show tab on the Ribbon.
- Click 'From Beginning' from the start Slide Show group or press F5 key on the keyboard to start the slide show from the first slide. Click mouse each time to see the next slide.

**III. LAB WORK (FOR STUDENTS)****1. Create a presentation on Festivals of Tamil Nadu. Save it with suitable name.**



PRACTICALS

PRACTICAL - TABLE OF CONTENTS

SI. No.	Name of the Experiment	Time	Month
1.	To find the diameter of a spherical body	40 minutes	June
2.	To find the thickness of given iron nail	40 minutes	October
3.	Melting point of wax	40 minutes	January
4.	Measurement of volume of liquids	40 minutes	July
5.	Identification of adaptations in animals	40 minutes	August
6.	Identification of plant and animal tissues	40 minutes	August
7.	To detect the adulterants in food samples	40 minutes	November
8.	Identification of microbes	40 minutes	November
9.	Economic biology	40 minutes	February
10.	Identification of adaptations in plants	40 minutes	February

1. To find the Diameter of a spherical body

Aim :

To determine the diameter of a spherical body using Vernier Caliper.

Apparatus required :

Vernier Caliper, given spherical body (cricket ball).

Formula:

(i) Least count (LC) = 1 Main scale division - 1 Vernier scale division .

$$LC = 1\text{mm} - 0.9\text{ mm}$$

$$LC = 0.1\text{ mm (or) } 0.01\text{ cm}$$

(ii) Diameter of the spherical object (d) = M.S.R. + (VC x LC) ± ZC cm

MSR - Main Scale Reading VC - Vernier Coincide

LC - Least Count. (0.01 cm) ZC - Zero Correction.

Procedure :

- The least count of the Vernier caliper is found.
- The zero correction of the Vernier caliper is calculated.
- The object is firmly fixed in between the two lower jaws.
- The main scale reading and the Vernier scale coincidence are measured.
- The experiment is repeated by placing the jaws of the Vernier at different position of the object.

Least count (LC) = 0.01cm. Zero correction = 0

S.NO	Main Scale Reading (MSR) cm	Vernier Coincide vc	Diameter of object (d) = M.S.R. + (VC x LC) ± ZC cm
1	7.4	4	= 7.4 + (4 x 0.01) + 0 = 7.44
2	7.4	5	= 7.4 + (5 x 0.01) + 0 = 7.45
3	7.4	6	= 7.4 + (6 x 0.01) + 0 = 7.46

$$\text{Average} = \frac{7.44+7.45+7.46}{3} = \frac{22.35}{3} = 7.45\text{ cm}$$

Report:

The diameter of the given spherical object (cricket ball) is = 7.45 cm (or) $7.45 \times 10^{-2}\text{ m}$

VIRUDHUNAGAR DISTRICT**Common Half Yearly Examination - December 2023**

Time : 2.30 Hours

Marks : 75

Part – I

Choose the correct answer:

12x1=12

- 1) Which among the following is not a device to measure.
a) Spring balance b) Beam balance c) Physical balance d) Digital balance
- 2) Clouds float in atmosphere because of their low _____.
a) density b) pressure c) velocity d) mass
- 3) In current electricity, a positive charge refers to _____.
a) presence of electron b) presence of proton
c) absence of electron d) absence of proton
- 4) _____ is used as reflectors in torch light.
a) Concave mirror b) Plane mirror c) Convex mirror d) Spherical mirror
- 5) Elements in the modern periodic table are arranged in _____ groups and _____ periods.
a) 7, 18 b) 18, 7 c) 17, 8 ^R d) 8, 17
- 6) Bond formed between a metal and non metal atom is usually _____.
a) Ionic bond b) Covalent bond c) Coordinate bond
- 7) Acid turn blue litmus papers to _____.
a) green b) red c) orange d) yellow
- 8) Mesoglea is present in _____.
a) Porifera b) Coelenterata c) Annelida d) Arthropoda
- 9) Smooth muscles occurs in _____.
a) Uterus b) Artery c) Vein d) all of the above
- 10) Transpiration takes place through _____.
a) fruit b) seed c) flowers d) stomata
- 11) Which of the following substance is not a constituent of sweat?
a) Urea b) Protein c) Water d) Salt
- 12) An Internal factor responsible for spoilage of food is _____.
a) Wax coating b) Contaminated utensils
c) Moisture content in food d) Synthetic preservatives

Part – II

Answer any 7 questions: (Q.No: 22 is compulsory)

7x2=14

- 13) Define Standard unit.
- 14) State Pascal's law.

15) State whether true or false. If false correct the statement.

- a) current can produce magnetic field
- b) A transformer can step up direct current.

16) Define Sublimation.

17) Write the electronic configuration of

- a) K
- b) Cl

18) Why are frogs said to be amphibians.

19) Why do we Sweat?

20) Assertion and reason type Question.

Assertion : Haemoglobin contains Iron anaemia.

Reason : Iron deficiency leads to anaemia.

- a) If both are true. Reason explain assertion.
- b) If both are true. But Reason is not correct explanation.
- c) If Assertion is true. But reason is false.
- d) If both Assertion and reason are false.

21) Expand the following.

- 1) ORS
- 2) WHO

22) Find the oxidation number of the elements in the following compounds.

- a) C in CO₂
- b) Mn in MnSO₄



Part – III

Answer any 7 questions: (Q.No.25 is compulsory)

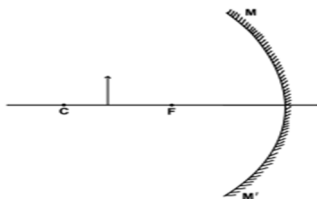
7x4=28

23) Differentiate mass and weight.

24) State Flemings left hand rule.

25) a) Complete the diagram to show how a Concave mirror forms the image of the object.

b) What is the nature of the image.



26) State any five features of Modern periodic table.

27) Write a note on different types of bonds.

28) What is Neutralization reactions? Give an example.

29) Match the following:

- | | |
|--------------------|-------------|
| a) Coelenterata | - Snail |
| b) Platyhelminthes | - Star fish |
| c) Echinodermata | - Tapeworm |
| d) Mollusca | - Hydra |

30) List five characteristic of fishes?

31) What is Skeletal connective tissues? How is helpful in the functioning of our body?

32) Explain any two methods of food preservation?

Part – IV

Answer all the questions.

3x7=21

33) Explain different types of motion.

(OR)

Describe the construction and working of mercury barometer.

34) Write the differences between elements and compounds and give an example.


(OR)

Write the uses of acids and bases.

35) Describe the alimentary canal of man.

(OR)

Give an account of classification of bacteria based on the shape.



VIRUDHUNAGAR DISTRICT
Common Annual Examination 2023

Time : 2.30 Hours

Marks : 75

Part – I

i) Answer all the questions:

12x1=12

1) Clouds float in atmosphere because of their low _____

- | | | | |
|------------|-------------|-------------|---------|
| a) density | b) pressure | c) velocity | d) mass |
|------------|-------------|-------------|---------|

2) Electroplating is an example for _____

- | | | | |
|-------------------|--------------------|-------------------|--------------------|
| a) heating effect | b) chemical effect | c) flowing effect | d) magnetic effect |
|-------------------|--------------------|-------------------|--------------------|

3) The sound waves travel faster _____

- | | | | |
|---------------|-------------|--------------|--------------|
| a) in liquids | b) in gases | c) in solids | d) in vacuum |
|---------------|-------------|--------------|--------------|

4) Ceres is a _____

- | | | | |
|-----------|---------|-----------|------------|
| a) Meteor | b) Star | c) Planet | d) Astroid |
|-----------|---------|-----------|------------|

5) Elements in the modern periodic table are arranged in _____ groups and _____ periods.

- | | | | |
|----------|----------|----------|----------|
| a) 7, 18 | b) 18, 7 | c) 17, 8 | d) 8, 17 |
|----------|----------|----------|----------|

டால்பின் பப்ளிகேசன்ஸ் புத்தகங்கள் கிடைக்குமிடங்கள்

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திருச்சி	ராசி பப்ளிகேசன்ஸ் - 0431-2703692, சுமதி பப்ளிகேசன்ஸ் - 0431-2703230, ஸ்ரீ முருகன் புக்சென்டர் - 0431-2703076, காயத்ரி புக் ஹவுஸ் - 97517-87873, ஸ்ரீராகவேந்திரா ஸ்டோர்ஸ் - 97887-57427, துறையூர் : கே.கே.ஆர் ஸ்டோர்ஸ் - 98656-58650
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