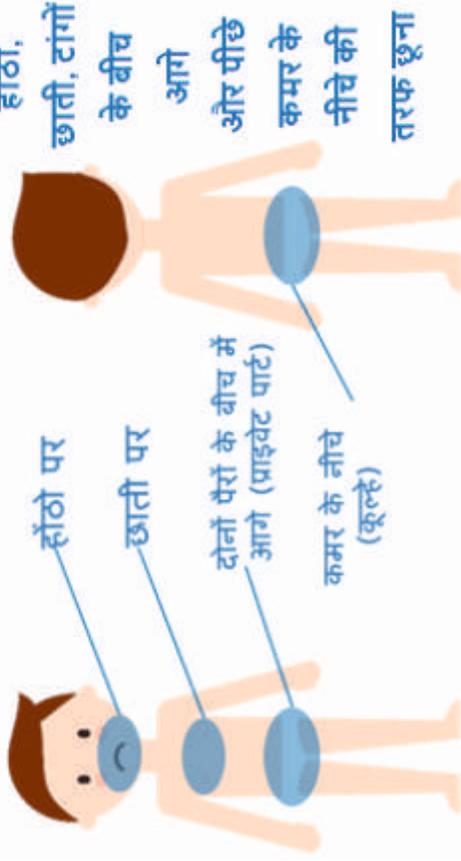


Practice book for filling learning gaps  
(based on learning outcomes)

# CLASS-10 SCIENCE

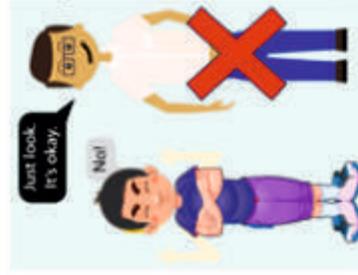
## बुरा/असुरक्षित स्पर्श क्या है ?



होंठों, छाती, टांगों के बीच आगे और पीछे कमर के नीचे की तरफ छूना



- किसी अजनबी द्वारा कोई असहज स्पर्श से बचना चाहिए
- अनजान ट्रांसपोर्ट / गार्डन / टॉयलेट का उपयोग सावधानी से करें ताकि आप किसी बुरे स्पर्श का शिकार न बनें
- सुनसान स्थानों / अँधेरे में बिना काम फालतू जाने से बचें



• अगर कोई आपके सामने अपने कपड़े उतारे या प्राइवेट पार्ट्स दिखाए या आपको भी ऐसा करने को कहे तो सावधान हो जाएँ



अगर कोई आपको गन्दी तस्वीरें/ वीडियो/ मैसेज आपको फोन/ लैपटॉप आदि पर दिखाता है या भेजता है तो ये भी बुरा स्पर्श है

बुरे स्पर्श से डरना नहीं है, बल्कि मुकाबला करना है...



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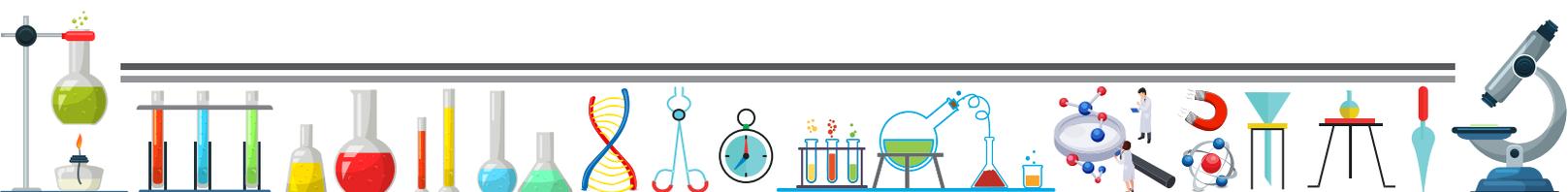
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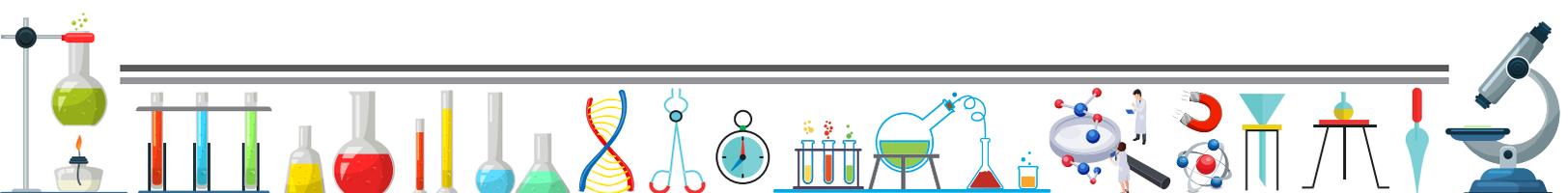
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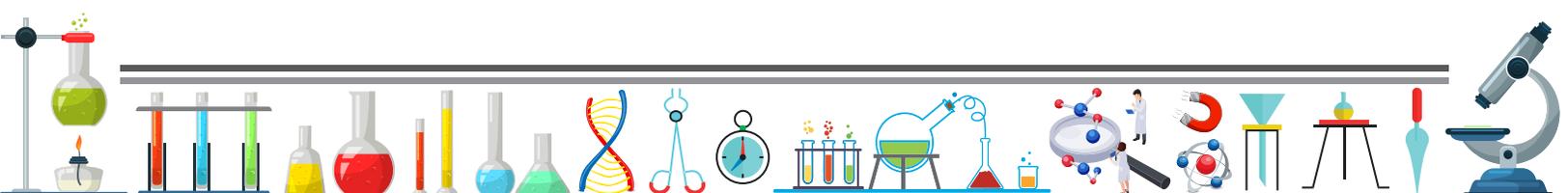
## From the desk of the Director

Dear Teachers,

Workbooks for Science, English and Mathematics subjects have been prepared for the students of class 9 and 10 by RSCERT, Udaipur and Rajasthan School Education Council, Jaipur. These workbooks are designed keeping in mind the core competencies and learning outcomes.

- This workbook does not recommend memorization but in learning by understanding.
- The purpose of this workbook is not just to fill out worksheets. Through this, the student has to learn by self-practice.
- We should not think of making it a part of the curriculum and completing it blindly. While working on this workbook, let us pay special attention to those children whose learning level is low.
- The workbooks are divided into three parts on the basis of summative assessment. Every effort was made to write the worksheets prepared in parts one, two and three in increasing order of competencies. Is., we have to keep this sequence in mind while giving practice work in the class room, but the teacher is free to make the child work on any worksheet as per his need.
- This is a workbook. Before working on this, it is necessary to complete the teaching-learning process on the related teaching material. While working on the workbook, we have to help the students, support them and provide them full opportunities to work.
- While working on some worksheets, we have to go beyond the curriculum and develop the imagination of children. To make the teaching interesting and engaging, activity-based worksheets have also been given in between. We will conduct these activities with full dedication.
- Your important suggestions are respectfully invited to make this workbook richer and error less.

It is hoped that this workbook will be helpful in strengthening the concepts learned by the children.



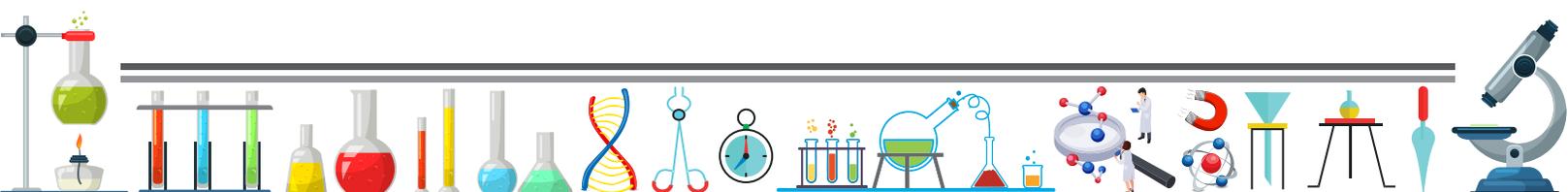
## For Teachers...

The workbook prepared by Rajasthan State Council of Educational Research and Training, Udaipur, is for those students admitted in class 10 who had obtained low level exam results in class 9. In this, workbook an effort has been made for the educational upgradation of the students. This workbook has been prepared for 45 days of remedial teaching in which 45 worksheets and test papers are given. One worksheet and test paper have to be solved per period. Along with the subject matter, the learning points and references to the current textbooks of classes 6, 7, 8 and 9 are also included in the worksheet. Before making the student solve the worksheet, 5 minutes are allotted for repetition of previous worksheets, 15 minutes for teaching the reference of today's worksheets, the next 20 minutes are for solving the worksheets and the last 10 minutes are allotted for testing, improvement work and feedback.

Adequate number of questions are given in the worksheet for practice hence teachers can prepare the required questions themselves and get them solved. The worksheets contain various interesting activities, games, puzzles etc. in simple and easy to understand language with the inclusion of learning material. that have been given an opportunity to read and understand.

There is freedom to solve the questions in the workbook through worksheets, students are expected to practice till they understand. The worksheets provide students an opportunity to understand at their own pace. Teachers can provide guidance if needed.

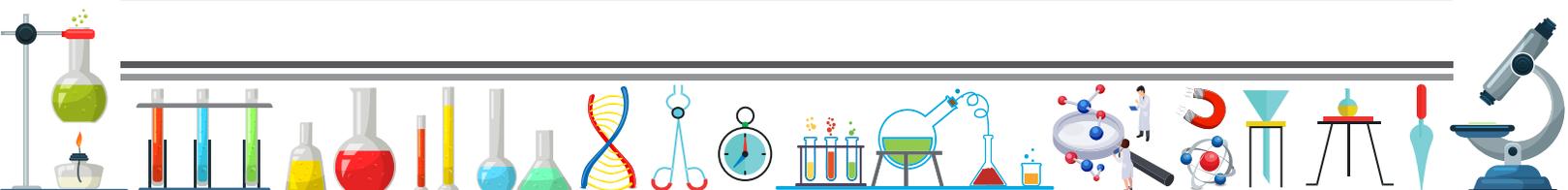
We hope this workbook would be useful for you and your students. Your positive suggestions are always invited.



## Subject – Science

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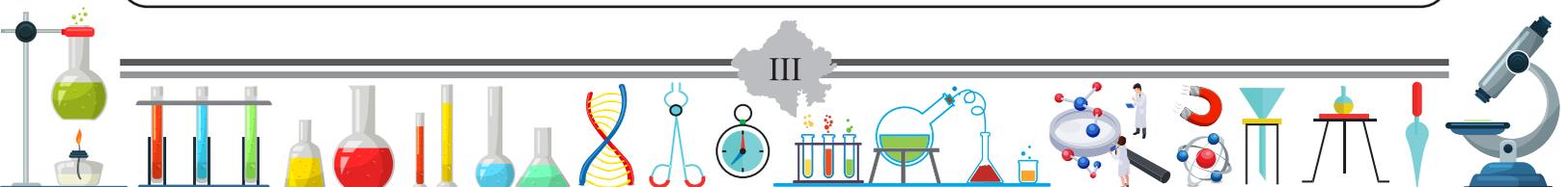






- Q. 25 What type of sound is used to measure distance, direction and speed in a device known as Sonar ?
- (A) Audible sound (B) Inaudible sound  
(C) Ultrasound (D) Echo ( )
- Q. 26 In which lens a virtual, erect and small image will always be formed no matter where the object is located ?
- (A) Concave (B) Convex (C) Plane (D) Bifocal ( )
- Q. 27 What is the magnifying power of a plane mirror ?
- (A) 1 (B) 2 (C) 3 (D) Infinite ( )
- Q. 28 Power of convex lens is ..... and power of concave lens is .....
- (A) Positive, Negative (B) Negative, Positive  
(C) Zero, Positive (D) Negative, Zero ( )
- Q. 29 What is the refractive index of diamond ?
- (A) 1.00 (B) 1.33 (C) 2.42 (D) 1.52 ( )
- Q. 30 The charge on an electron is -
- (A)  $1.6 \times 10^{-19}$  C (B)  $1.6 \times 10^{19}$  C  
(C)  $1.6 \times 10^{-23}$  C (D)  $1.6 \times 10^{23}$  C ( )

**Teacher Feedback :** \_\_\_\_\_ **Signature :** \_\_\_\_\_



# 1. Chemical Reactions and Equations

## Worksheet-1

Q 1. What are the reactants and products in the reaction ?



---

---

Q 2. Write the formula of calcium carbonate.

---

Q 3. Write the law of conservation of mass.

---

---

Q 4. Write one of the method of balancing a chemical equation.

---

Q 5. Write the chemical name and chemical formula of slaked lime.

---

Q 6. Which type of reaction are the following equation ?



---

Q 7. Give an example of double displacement reaction.

---

Q 8. In the reaction  $\text{ZnO} + \text{C} \longrightarrow \text{Zn} + \text{CO}$  which reactant is being oxidised and which is being reduced.

---

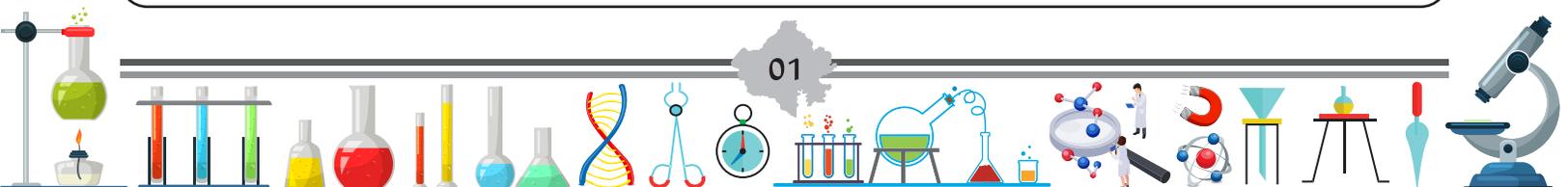
Q 9.  $\text{CuSO}_4$  cannot be kept in a container containing Zn. Why ?

---

Q 10. When lead nitrate is heated, brown smoke is emitted. Which gas is it ?

---

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_





# 1. Chemical Reactions and Equations

## Worksheet-3

Q 1. Define corrosion ? Give an example -

---

---

Q 2. Due to which incident silver turns black ?

---

Q 3. Due to which process greenish colour appears on copper ?

---

Q 4. Why do oily foods change their taste after a certain period ?

---

Q 5. Which gas is filled in a sealed bag of chips ?

---

Q 6. Define the oxidation-reduction reaction.

---

Q 7. Why is precipitate obtained ?

---

Q 8. Balance the following reaction -



---

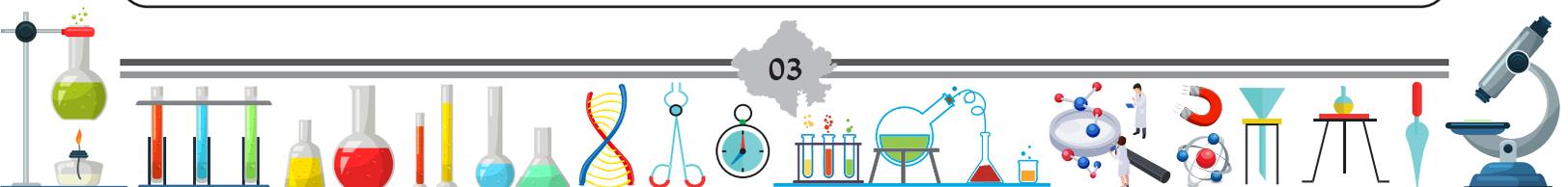
Q 9. Write the symbol of potassium.

---

Q 10. Write the chemical formula of water.

---

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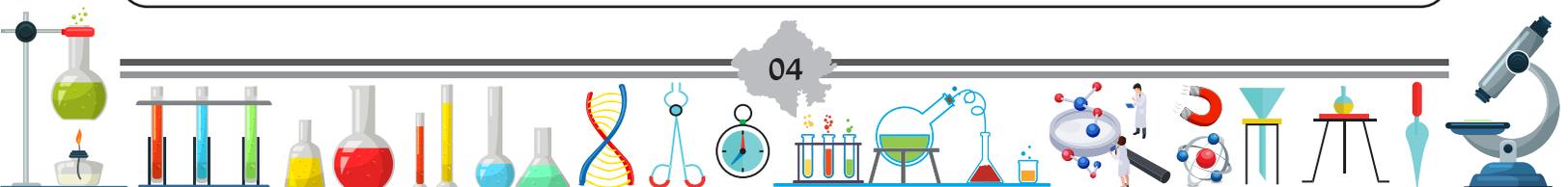


## 2. Acids, Bases and Salts

### Worksheet-4

- Q 1. Lemon contains -  
(A) Tartaric acid (B) Citric acid  
(C) Hydrochloric acid (D) lactic acid ( )
- Q 2. Explain the difference between acid and base.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- Q 3. Which acid secretes in the stomach of our digestive system ?  
\_\_\_\_\_
- Q 4. Write the formula of hydronium ion.  
\_\_\_\_\_
- Q 5. What is the relationship between the concentration of hydrogen ion and pH ?  
\_\_\_\_\_
- Q 6. Why is the colour of the marble of Taj Mahal turning yellow ?  
\_\_\_\_\_
- Q 7. Why does acid rain occur ?  
\_\_\_\_\_
- Q 8. Draw a pH scale.  
\_\_\_\_\_
- Q 9. The pH of neutral solution is -  
(A) 7 (B) 14 (C) 5.5 (D) 7.8 ( )
- Q 10. Write the name of the outer most layer of the teeth.  
\_\_\_\_\_

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



## 2. Acids, Bases and Salts

### Worksheet-5

Q 1. A base produces ..... in solution.  
(A)  $H^+$  ion      (B)  $H_3O^+$  ion      (C)  $OH^-$  ion      (D)  $OH_2^+$  ion      ( )

Q 2. Define the base ? Give any one example.

---

---

Q 3. Aqueous solution of acid conducts electricity, why ?

---

---

Q 4. Write the difference between strong acid and weak acid.

---

---

Q 5. Match -

- |                               |        |
|-------------------------------|--------|
| (A) Strong acid - Weak base   | > 7 pH |
| (B) Strong acid - Strong base | < 7 pH |
| (C) Strong base - Weak acid   | = 7 pH |

Q 6. Burning pain is experienced by the bee sting due to which acid ?

---

Q 7. Write down the chemical formula of baking soda.

---

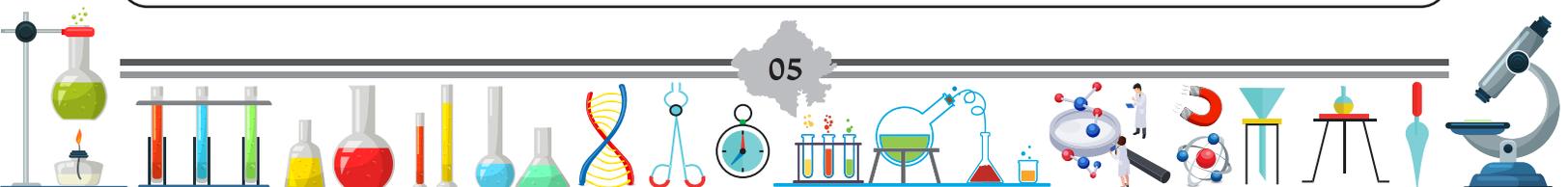
Q 8. Give examples of two strong bases.

---

Q 9. Write the chemical formula and use of bleaching powder.

---

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



## 2. Acids, Bases and Salts

### Worksheet-6

Q1. What is the reason for the mixture coming out when water is added to concentrated acid?

- (A) Endothermic reaction (B) Exothermic reaction  
(C) Neutralization (D) Combination ( )

Q 2. What will be the change in the value of pH when milk curdles ?

---

Q 3. Explain the chlor-alkali process.

---

---

Q 4. Write the name and formula of the compound used to remove permanent hardness of water.

---

---

Q 5. Write the chemical formula of copper sulphate.

---

Q 6. Write the chemical equation of the reaction of plaster of Paris with water.

---

Q 7. What is the nature of  $\text{CO}_2$  ? (acidic or alkaline)

---

---

Q. 8. Name the substance which reacts with chlorine to form bleaching powder.

---

Q. 9. Match the following :

Vinegar

Methanoic acid

Tomato

Acetic acid

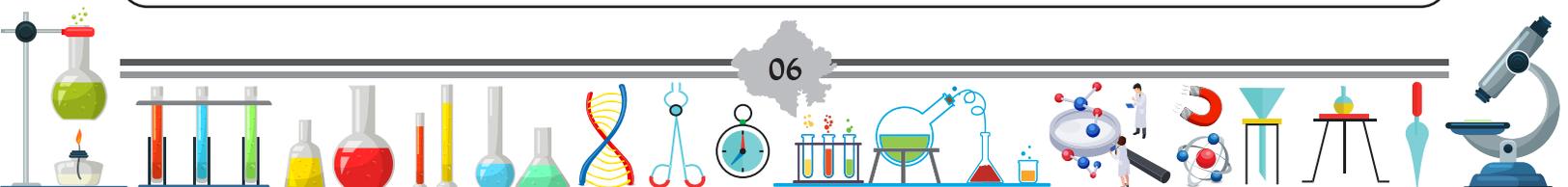
Ant sting

Lactic acid

Curd

Oxalic acid

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



### 3. Metals and Nonmetals

#### Worksheet-7

Q 1. Write any four characteristics of metal.

( 1 ) \_\_\_\_\_ ( 2 ) \_\_\_\_\_

( 3 ) \_\_\_\_\_ ( 4 ) \_\_\_\_\_

Q 2. Write the full name of PVC.

\_\_\_\_\_

Q 3. Name the non-metal which is found in liquid state.

\_\_\_\_\_

Q 4. Write the different quality of mercury from other metals ?

\_\_\_\_\_

Q 5. Why is sodium kept in kerosene ?

\_\_\_\_\_

\_\_\_\_\_

Q 6. Write the ratio of composition of aquaregia.

\_\_\_\_\_

Q 7. Which mixture do people use to cheat in the name of cleaning jewellery ?

\_\_\_\_\_

Q 8. What is called metal ?

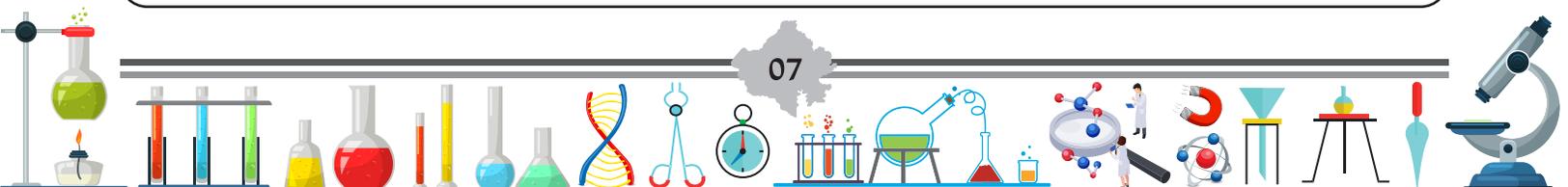
\_\_\_\_\_

Q 9. What is called isotope ?

\_\_\_\_\_

\_\_\_\_\_

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



### 3. Metals and Nonmetals

#### Worksheet-8

Q 1. The reactivity of noble gases is very low. Why ?

---

Q 2. Write the name of the bond found in ionic compounds.

---

Q 3. Why do ionic compounds have high melting and boiling points ?

---

Q 4. Write the electron-dot structure for sodium and magnesium.

Q 5. Find the difference between the following -

(a) Mineral - Ore

---

---

(b) Roasting - Calcination

---

---

Q 6. Why are antacids used in case of stomach irritation ?

---

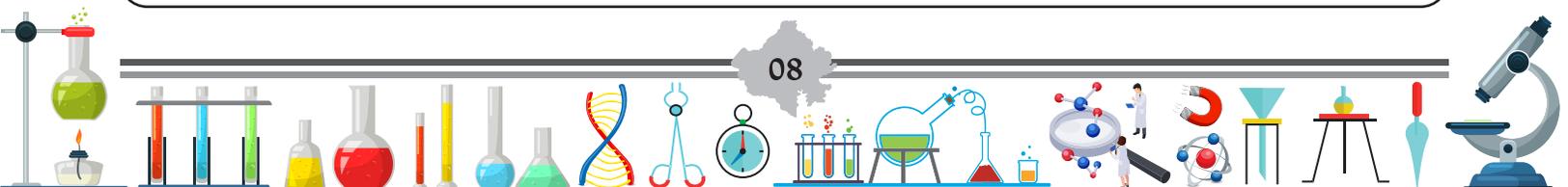
Q 7. Write the name of two metals which are found in free state in nature.

---

Q 8. Write the name of the compound which gives blackness to silver ?

---

**Teacher Feedback :** \_\_\_\_\_ **Signature :** \_\_\_\_\_



### 3. Metals and Nonmetals

#### Worksheet-9

Q 1. Explain the corrosion of copper.

---

---

---

Q 2. What is Galvanization ?

---

Q 3. Write the alloy of stainless steel.

---

Q 4. The bronze medal awarded in the Olympic Games is a mixture of which metals ?

---

Q 5. Match the followings -

- |                    |   |                 |
|--------------------|---|-----------------|
| (A) Amalgam        | - | Copper + Zinc   |
| (B) Brass          | - | Gold + Copper   |
| (C) Solder         | - | Metal + Mercury |
| (D) Gold ornaments | - | Lead + Tin      |

Q 6. Copper is used in making geysers, not steel. Give the reason ?

---

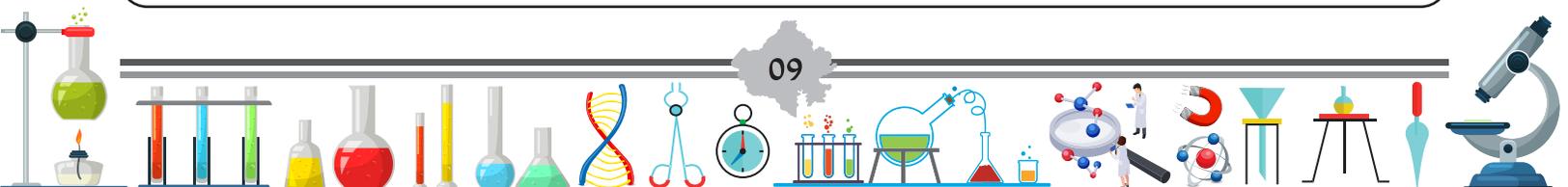
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Q 7. Why should sour foods not be kept in brass and copper utensils ?

---

---

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## 4. Carbon and its Compounds

### Worksheet-11

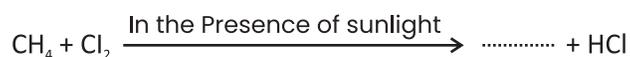
Q 1. What is called Atom ?

---

---

---

Q 2. Complete the following chemical equation :



Q 3. Explain hydrogenation and explain its use.

---

---

---

Q 4. Write the formula of Ethane and make a electron dot structure.

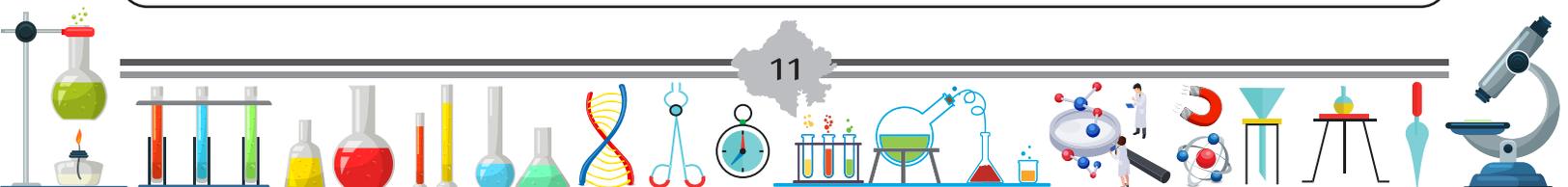
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Q 5. Write the formula of the following compounds :

(a) Butane \_\_\_\_\_

(b) Ethanol \_\_\_\_\_

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## 5. Life Processes

### Worksheet-14

Q1. What is the difference between conduction of the substances in xylem and phloem ?

---

---

---

---

Q 2. Cow's small intestine is long and lion's small intestine is short, why is it so ?

---

---

Q 3. Make a labelled diagram of the human excretory system.

Q 4. What is dialysis ? Explain it :

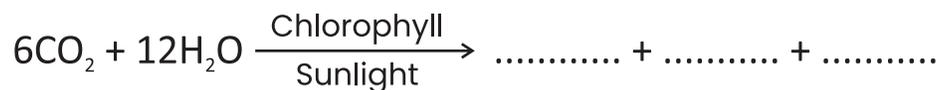
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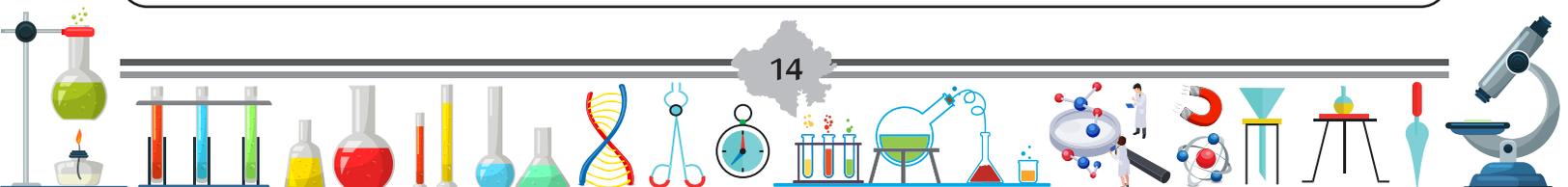
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Q 5. Complete the following chemical reaction of photosynthesis -



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## 5. Life Processes

### Worksheet-15

Q 1. Why is the Pituitary gland called as the Master gland ?

---

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---

Q 2. Draw a diagrammatic pathway of air from the nostrils to the Alveoli in the Human Respiratory System.

Q 3. What is the systolic and diastolic pressure of a healthy human being ?

---

---

---

Q 4. Blood is red in colour while lymph is colourless, explain the reason.

---

---

Q 5. What structures are found in the small intestine to absorb digested food and what is their speciality ?

---

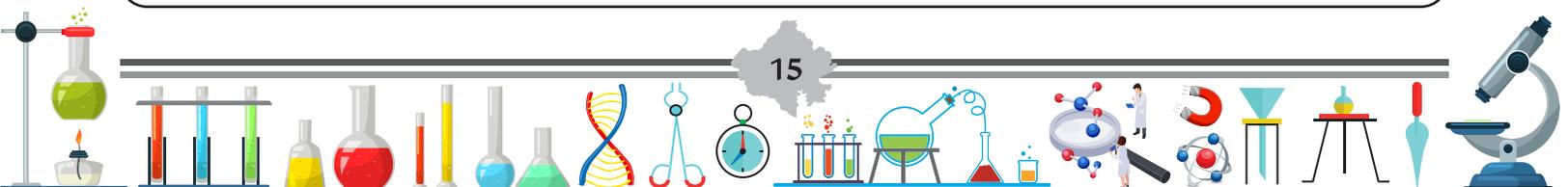
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## 5. Life Processes

### Worksheet-16

Q 1. What is the role of saliva in digestion of food ?

---

---

---

Q 2. Write the name of functional and structural unit of kidney.

---

Q 3. Why is the breathing rate of aquatic organisms higher than that of terrestrial organisms ?

---

---

---

---

Q 4. What can be the bad effects of hemoglobin deficiency in our body ?

---

---

---

---

Q 5. Name the two unicellular organisms.

(i) \_\_\_\_\_ (ii) \_\_\_\_\_

Q 6. Mention any two waste products of plants.

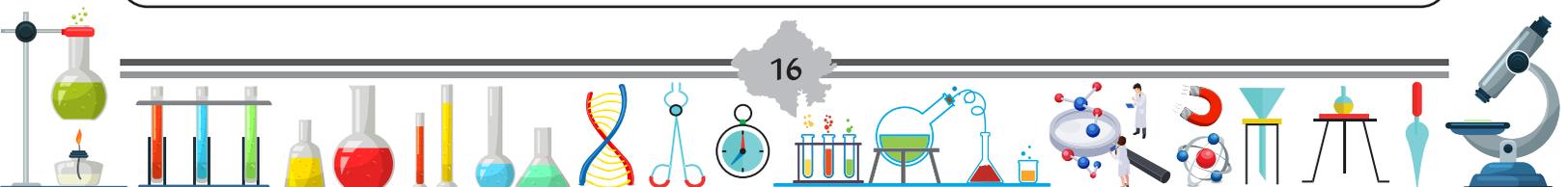
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Q 7. Mention any one difference between the circulatory system of fish and humans.

---

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## 5. Life Processes

### Worksheet-17

Q 1. Why do we feel cool under a tree in summer ?

---

---

Q 2. What is the role of mucus in human stomach ?

---

---

---

Q 3. Why are green plants called autotrophic ?

---

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---

---

Q 4. What is Life processes ?

---

---

---

Q 5. Write any two differences between aerobic and anaerobic respiration.

---

---

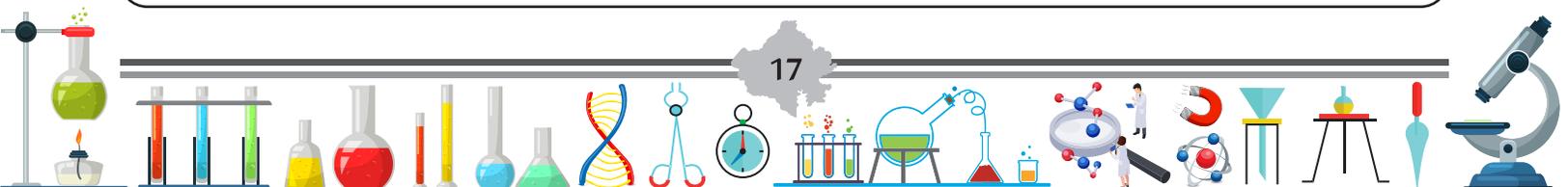
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Q 6. Which system is responsible for removing waste materials from the body in humans ?

---

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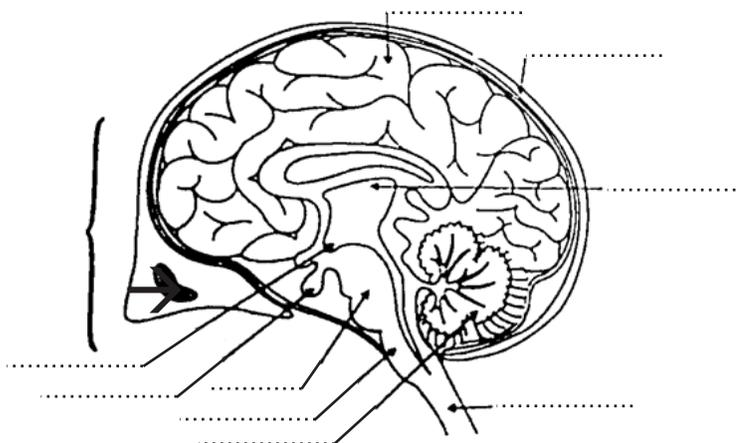
## 6. Control and Coordination

### Worksheet-18

- Q 1. Which of the following is a correct sequence of reflex arc ?
- (a) Receptor → Muscles → Sensory neurons → Motor neurons → Spinal cord
  - (B) Receptor → Motor neuron → Spinal cord → Sensory neuron → Muscles
  - (c) Receptors → Spinal cord → Sensory neurons → Motor neurons → Muscles
  - (d) Receptor → Sensory neuron → Spinal cord → Motor neuron → Muscles

Q 2. Label the different parts of the human brain -

1. Cerebrum
2. Scleroid
3. Hypothalamus
4. Pituitary Gland
5. Thalamus
6. Spinal Cord
7. Cerebellum
8. Medulla Oblongata
9. Midbrain



Q 2 Why does the gardener cut off the tops of the branches of the Henna bushes to make them more dense ?

---

---

Q 3: A plant is growing normally in height but it's lateral branches are not developing. Why does this happen ?

---

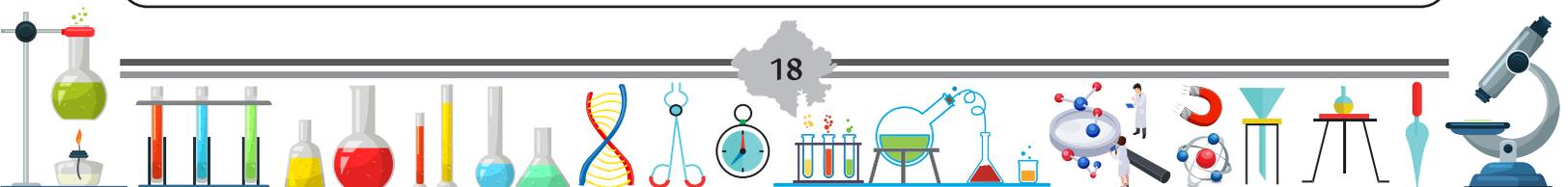
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Q 4 If the thyroid gland of a mammal is removed, what side effects will be visible ?

---

---

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## 6. Control and Coordination

### Worksheet-19

Q 1. What can be the causes of Dwarfism in humans ?

---

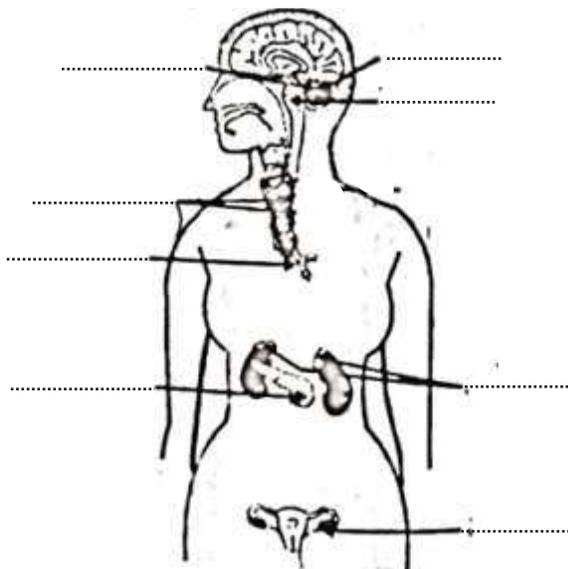
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Q2. Label the location of the following endocrine glands in the diagram of the human body.

1. Pineal Gland
2. Pituitary Gland
3. Thyroid Gland
4. Adrenal Gland
5. Ovarian Gland
6. Thymus Gland
7. Hypothalamus Gland
8. Pancreatic Gland



Q 3. Which gland found in the human body is both endocrine and exocrine ?

---

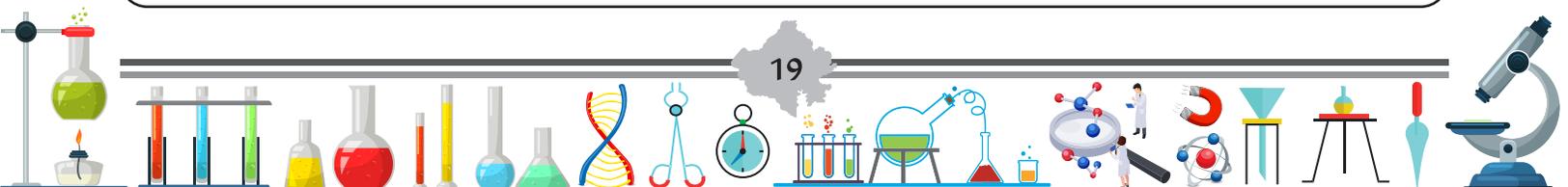
Q 4. Why is it advised to eat iodized salt ?

---

---

Q 4. \_\_\_\_\_ is a plant hormone that induces cell division.

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



## 6. Control and Coordination

### Worksheet-20

Q 1. Why are some diabetic patients treated by giving them injections of insulin ?

---

---

---

---

Q 2. Make a labelled diagram of a nerve cell.

Q 3. Match the endocrine gland with their corresponding secreted hormone -

#### Endocrine gland

1. Pancreatic gland
2. Testicular gland
3. Ovarian gland
4. Thyroid gland
5. Pituitary gland
6. Adrenal gland

#### Secreted hormone

- Growth Hormone  
Adrenalin  
Testosterone  
Oestrogen  
Insulin  
Thyroxin



Q 4. Electrical signals are converted into chemical signals in a neuron.

(A) In the cell body

(B) On the axon

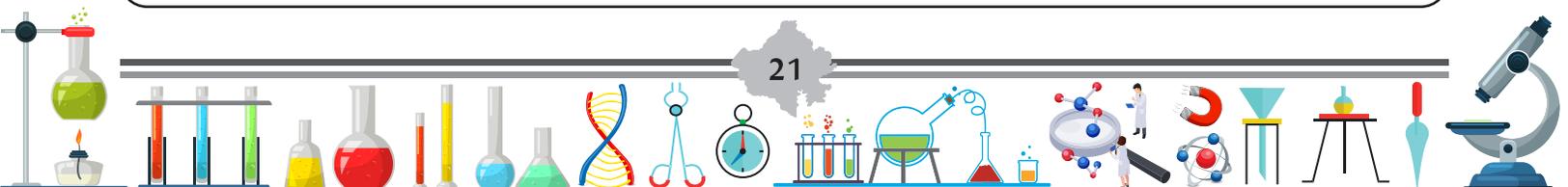
(C) On dendrites

(D) At the end of axon

( )

Q5. Define reflex action ? Explain the entire process by drawing a diagram of a reflex arc -

**Teacher Feedback :** \_\_\_\_\_ **Signature :** \_\_\_\_\_



## 7. How do Organisms Reproduce ?

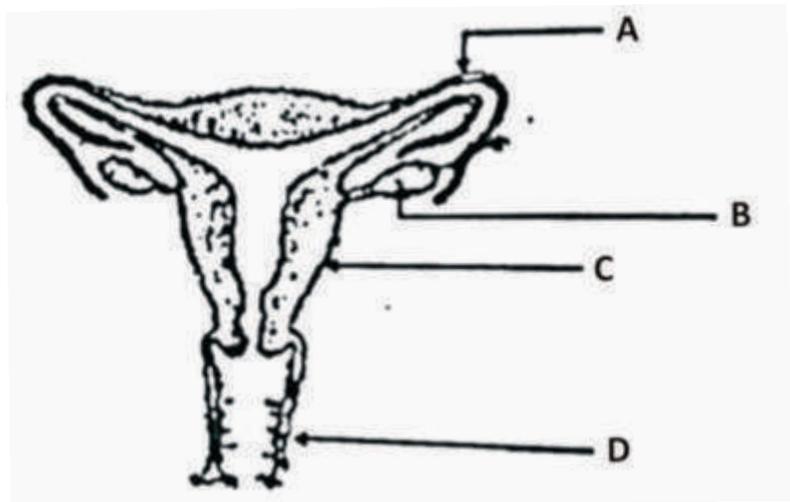
### Worksheet-21

Q 1. Which of the following characteristics is a type of reproduction in Amoeba, Spirogyra and yeast ?

- (A) They reproduce asexually.                      (B) They are all unicellular.  
(C) They all reproduce only sexually.            (D) All of them are multicellular

Q 2. Write the names of different parts of ovary A, B, C, D in the following picture.

- A .....  
B .....  
C .....  
D .....



Q 3. Why are the testicles outside the body cavity ?

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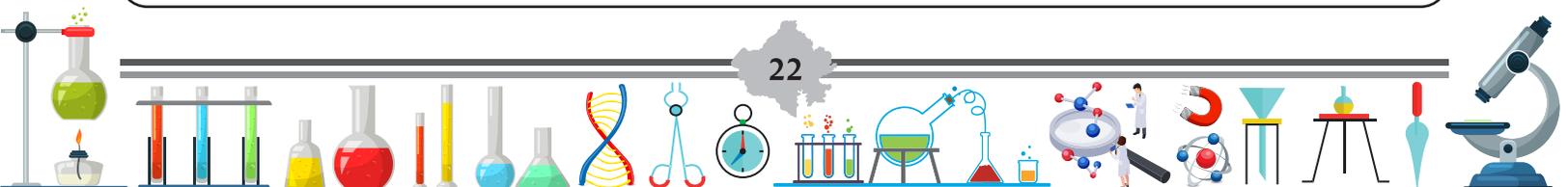
Q 4. What will be the side effects if the vas deferens is removed in an adult and a rubber tube is placed in its place ?

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Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



## 7. How do Organisms Reproduce ?

### Worksheet-22

Q 1. If the fallopian tube in women is tied with a thread, which process will be affected ?

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Q 2. Label the following picture of longitudinal section of a flower:

1. Style
2. Stamens
3. Stigma
4. Calyx
5. Ovary
6. Corolla
7. Anther Sac

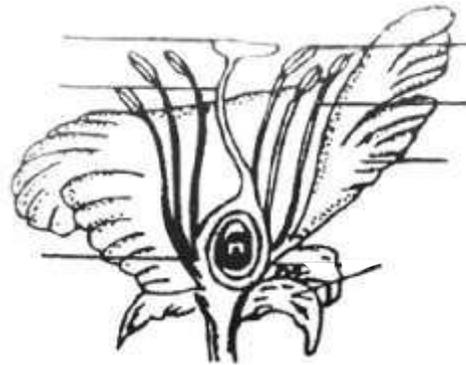


Figure - Longitudinal section of flower

Q 3. Write the full name of AIDS.

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Q 4. What are unisexual and bisexual flowers ? Write an example of each.

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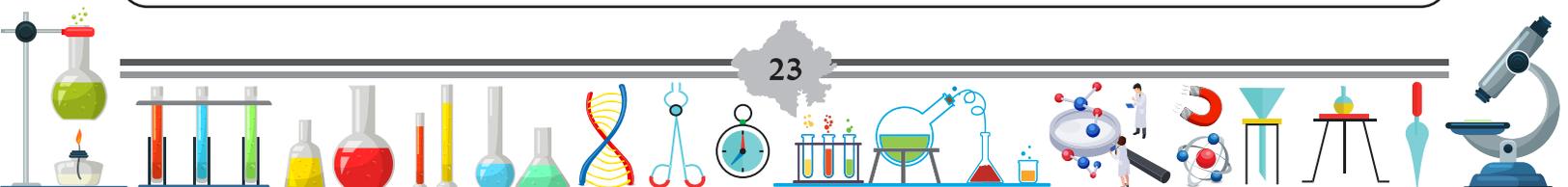
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Q 5. The process of development in which the entire organism is formed from some part of the body is called.

- |                         |                       |
|-------------------------|-----------------------|
| (A) Sexual Reproduction | (B) Regeneration      |
| (C) Both A and B        | (D) None of the above |

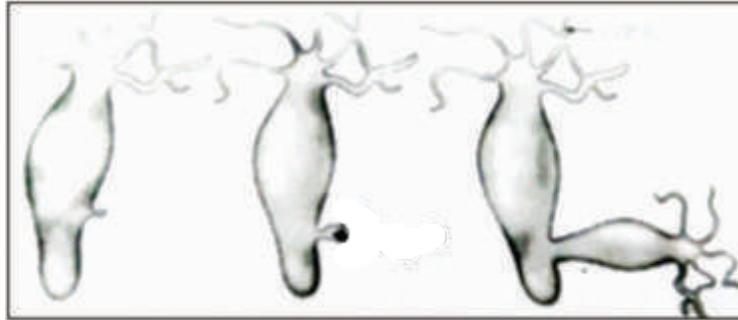
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## 7. How do Organisms Reproduce ?

### Worksheet-23

Q 1. Name the organism and type of reproduction shown in the picture ?



Name of organism \_\_\_\_\_

Type of asexual reproduction \_\_\_\_\_

Q 2. Why is the urinary tract of men called Ambidextrous ?

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Q 3. Why does menstrual discharge occur ?

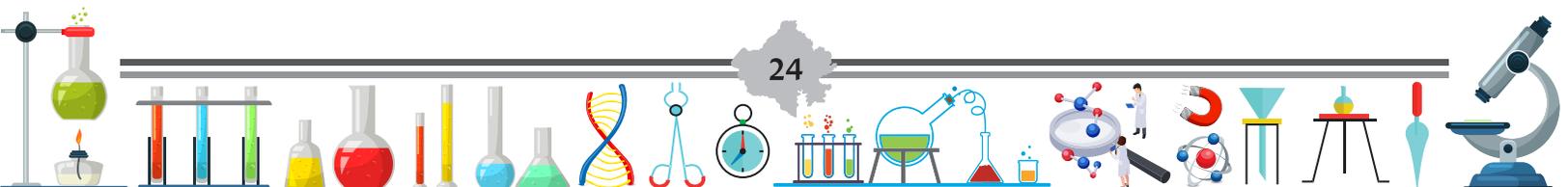
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Q 4. Make a labelled diagram of the human Male Reproductive System.



Q 5. Vegetative propagation is -

(A) In which gamete formation and fertilization do not occur.

(B) Any part of the plant develops by asexual method.

(C) Both A and B.

(D) None of the above.

( )

Q 6. Define budding, fragmentation and regeneration and explain the reproduction taking place in Planaria with a diagram.

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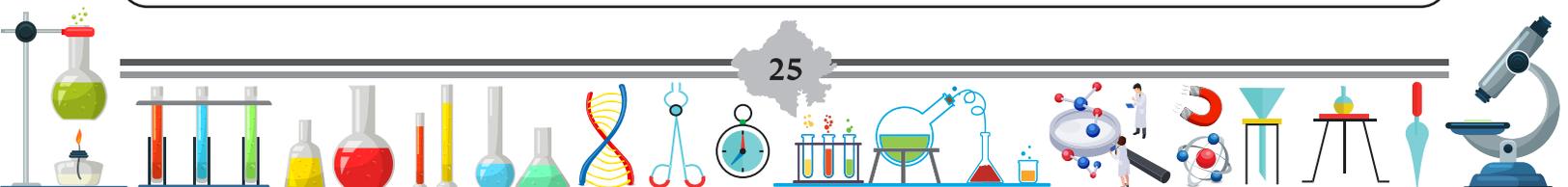
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# 8. Heredity

## Worksheet-24

Q 1. Can the wings of a butterfly and a bat be called homologous organs ?  
If yes or no then why ?

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Q 2. Wings of bats and wings of birds are analogous organs, how ?

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Q 3. How did Mendel's experiments reveal whether traits are dominant or recessive ?

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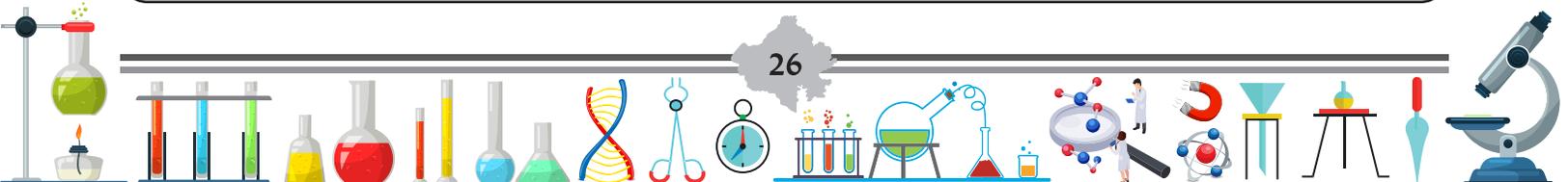
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Q 4. Zygote is formed by the X chromosome from the gamete received from the father.  
As an offspring from this zygote. .... will be born.

Q 5. When a tall plant (TT) is crossed with a dwarf plant (tt), all the progeny obtained shows the trait of tallness because -

- (A) Tallness is a dominant trait.
- (B) Dwarfism is a dominant trait
- (C) Tallness is a recessive trait
- (D) None of the above

**Teacher Feedback :** \_\_\_\_\_ **Signature :** \_\_\_\_\_



# 8. Heredity

## Worksheet-25

Q 1. Draw a diagrammatic representation of human sex determination.

Q 2. Write a brief introduction of John Gregor Mendel.

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Q 3. What is the difference between genotype and phenotype ?

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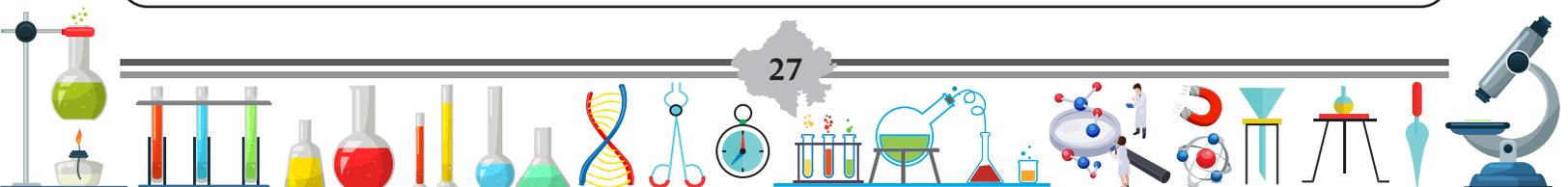
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Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



# 8. Heredity

## Worksheet-26

Q1. Which of the following organs are homologous and which are analogous organs?

- Elephant trunk and Chimpanzee hand \_\_\_\_\_
- Bird wings and Bat wings \_\_\_\_\_
- Human nail and Cat's claw \_\_\_\_\_

Q 2. What is the law of segregation given by Mendel ?

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Q 3. Which theory did Darwin hypothesize ?

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Q 4. What is fossil ?

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Q 5. What is autosomal chromosome ? How many autosomal chromosomes are there in humans ?

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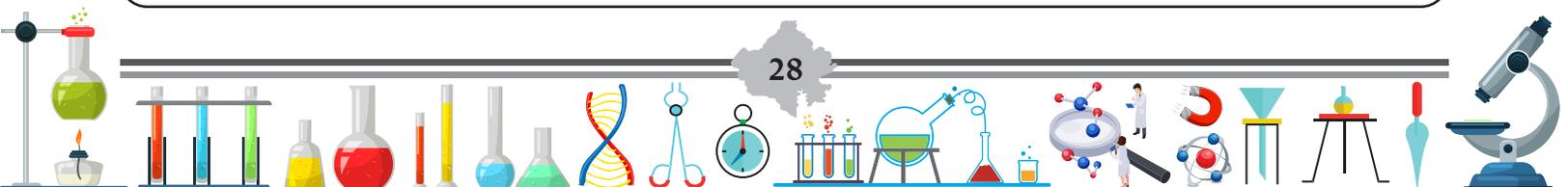
Q 6. Explain the difference between homologous and analogous organs.

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Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



## 9. Light Reflection and Refraction

### Worksheet-27

Q 1. Write the value and unit of the velocity of light.

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Q 2. What is the accommodation capacity of the eye ?

---

Q 3. Write the difference between mirror and lens.

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Q 4. Which lens is there in the human eye ?

---

Q 5. Write the definition of the following:

(A) Center of curvature of the lens

(B) Principal axis

(C) Main focus

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Q 6. The image of an object formed on the retina is -

(A) Erect and real

(B) Erect and virtual

(C) Inverted and virtual

(D) Inverted and real

( )

Q 7. Which mirror is used by dental experts ?

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Q 8. From which point are all the distances of the mirrors measured ?

(A) Center of curvature

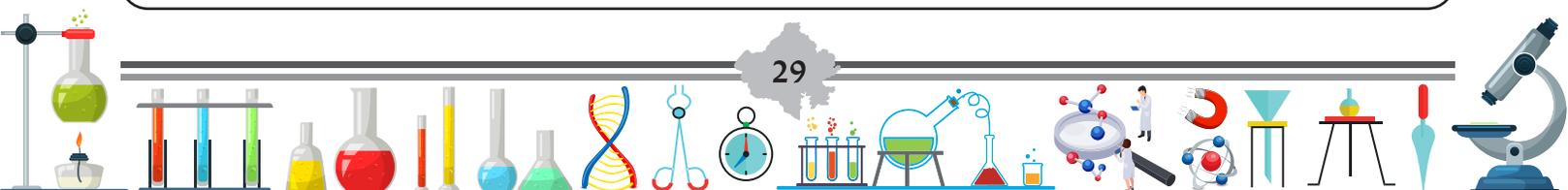
(B) Pole

(C) Focus

(D) None of these

( )

**Teacher Feedback :** \_\_\_\_\_ **Signature :** \_\_\_\_\_

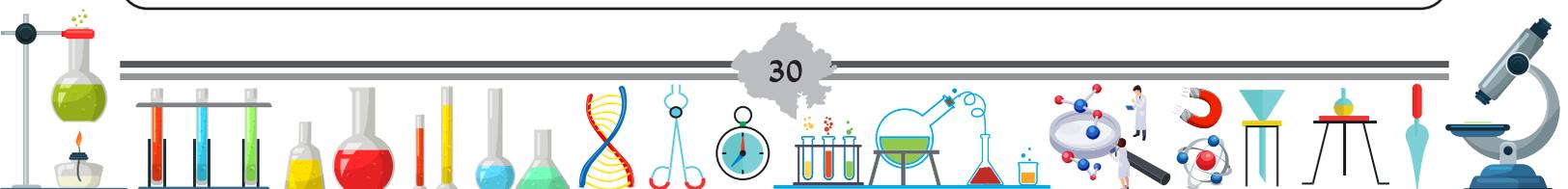


## 9. Light Reflection and Refraction

### Worksheet-28

- Q 1. Diopter is the unit of -  
(A) Focal length (B) Magnification  
(C) Power (D) Resolution capability ( )
- Q 2. What is the difference between real and virtual image ?  
\_\_\_\_\_  
\_\_\_\_\_
- Q 3. Write the formula for the relationship between radius of curvature and focal length.  
\_\_\_\_\_
- Q 4. Write the names of the seven colors present in the light spectrum in sequence.  
\_\_\_\_\_  
\_\_\_\_\_
- Q 5. Write two uses each of convex mirror and concave mirror.  
\_\_\_\_\_  
\_\_\_\_\_
- Q 6. If the power of a lens is +2 diopter then calculate the focal length.  
\_\_\_\_\_  
\_\_\_\_\_
- Q 7. Why are convex mirrors used for rear view in vehicles ?  
\_\_\_\_\_  
\_\_\_\_\_
- Q 8. What is called the absolute refractive index of the medium ? What will be the Refractive Index of water  $n_w$  ?  
\_\_\_\_\_

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



## 9. Light Reflection and Refraction

### Worksheet-29

Q 1. Write the definition of refraction.

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Q 2. What do you mean by denser medium and rarer medium ? Give one example of each.

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Q 3. The image formed by a mirror is equal and inverted in shape to the object, the mirror is -

- (A) Only plane (B) Only concave  
(C) Convex only (D) Convex or concave ( )

Q 4. Write the lens formula and name the symbols.

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Q 5. Write Snell's law and its formula.

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Q 6. What is Tyndall effect ?

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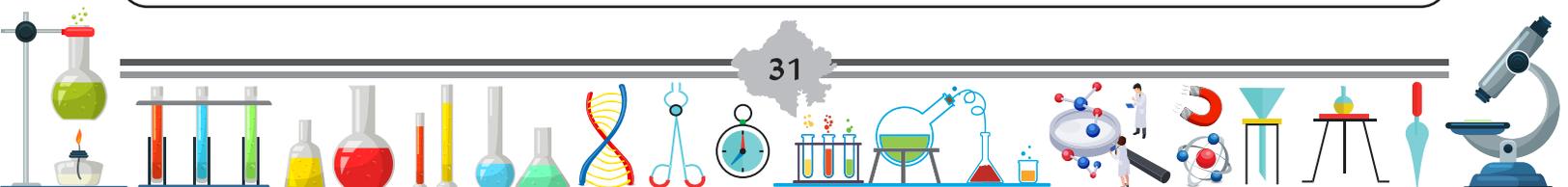
Q 7. Explain the rules of refraction -

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Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_





## 9. Light Reflection and Refraction

### Worksheet-31

Q 1. Why does a pencil immersed in water appear bent ? Explain.



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Q 2. Write the formula for the magnifying power of a lens.

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Q 3. Draw a labelled ray diagram of refraction from water.

Q 4. The part of the human eye on which the image of an object is formed is -

(A) Cornea                      (B) Retina                      (C) Pupil                      (D) Iris                      (    )

Q 5. Why do the stars appear to twinkle ?

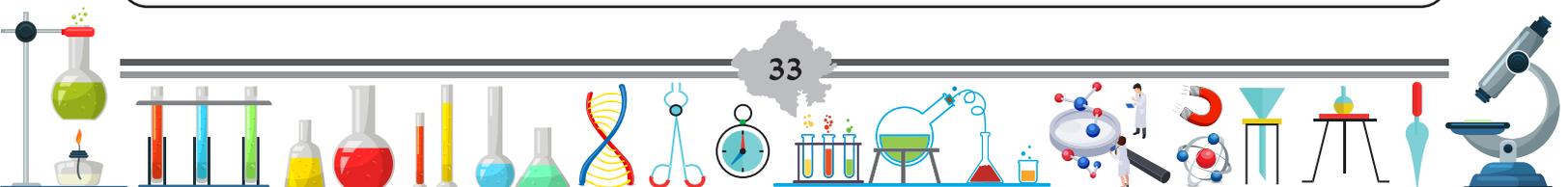
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Q 6. The light ray passing through the optical center of the lens emerges without any deviation after refraction. Draw a ray diagram of a concave lens to demonstrate this.

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_

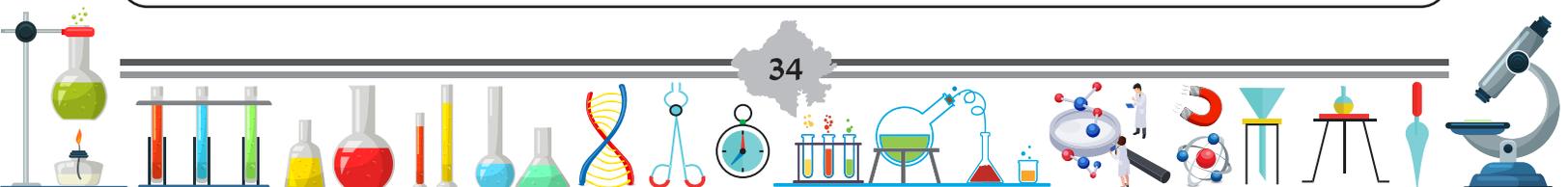


## 9. Light Reflection and Refraction

### Worksheet-32

- Q1. Draw the ray diagram of image formation by a convex lens, while the object is situated at the center of curvature.
- Q2. Half of a convex lens is covered with black paper. Will this lens be able to form a complete image of an image? Explain.
- Q3. The radius of curvature of a convex mirror used to view the rear view in an automobile is located at a distance of 3 meter. If a bus is situated at a distance of 5 meter from this mirror, find the position, nature and size of the image.

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



# 10. The Human Eye and the Colourful World

## Worksheet-33

Q 1. Make a labelled diagram of human eye.

Q 2. What do you understand by cataract ?

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Q 3. Find the power of a lens of focal length 0.5 meter.

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Q 4. What is presbyopia ?

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Q 5. When we can see with one eye, why do we need two eyes ?

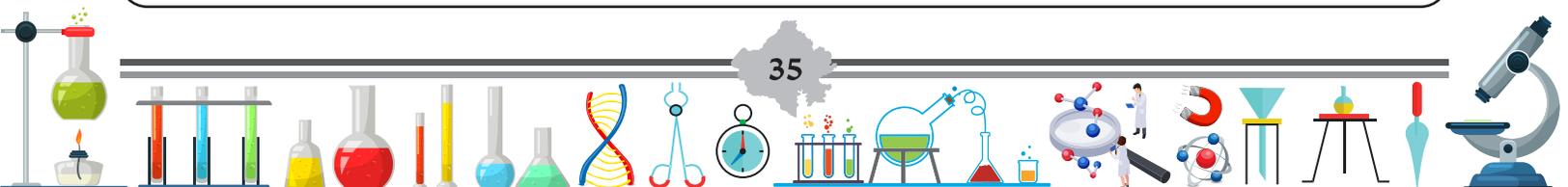
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Q 6. The part of the human eye which protect it from the dust is -

- (A) Retina (B) Lens  
(C) Eye Lids (D) Optic Nerve ( )

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



# 10. The Human Eye and the Colourful World

## Worksheet-34

Q 1. Why is a rainbow formed ?

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Q 2. A student sitting in the last row faces difficulty in reading what is written on the blackboard. Which visual defect is this student suffering from ? How can this be resolved ?

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Q 3. Why does the Sun appear reddish at sunrise ?

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Q 4. Why is the colour of the clear sky seems blue ?

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Q 5. What is the reason of refraction ?

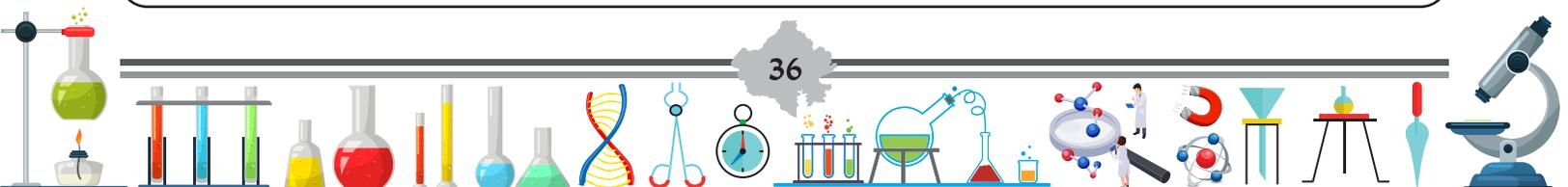
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Q 6. Which lens is used to correct near-sightedness ?

- (A) Concave lens (B) Convex lens  
(C) Bifocal lens (D) Cylindrical lens ( )

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



# 10. The Human Eye and the Colourful World

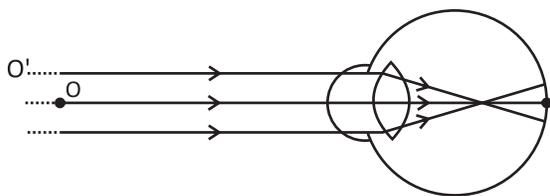
## Worksheet-35

Q 1. What is called vision range ?

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Q 2. Which visual defect of the eye is the given ray diagram showing ? Where is the image of the object being formed in this ?



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Q 3. If the iris is not there, what effect will it have on the eye ?

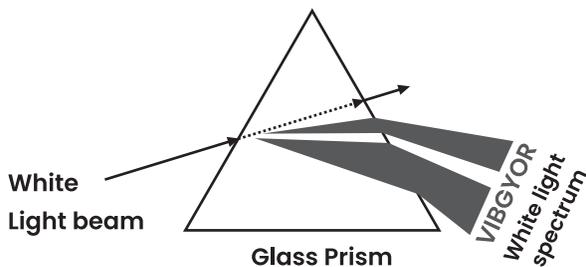
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Q 4. If a person wears glasses with bifocal lenses, which eye disease does he have ?

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Q 5. Which phenomenon of light is this picture showing ? Explain this.



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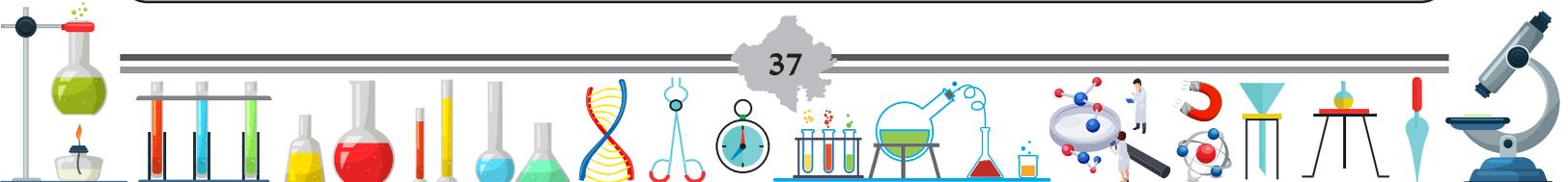
Q 6. Define prism angle.

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Q 7. What is the minimum distance of clear vision for the eye ?

- (A) Infinite      (B) 7 cm      (C) 10 cm      (D) 25 cm      ( )

**Teacher Feedback :** \_\_\_\_\_ **Signature :** \_\_\_\_\_



# 11. Electricity

## Worksheet-36

Q 1. A 100 W electrical appliance is used for 6 hours a day. How much energy (in units) will he use in 30 days ?

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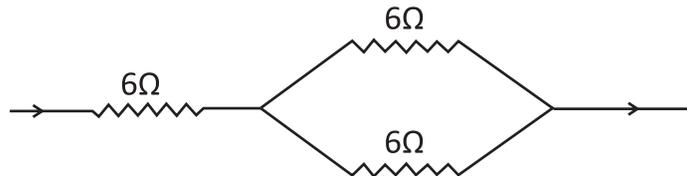
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Q 2. Define one ampere current.

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Q 3. Make a symbolic diagram of a simple electrical circuit.

Q 4. Find the equivalent resistance of the shown figure.



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Q 5. What is called electric power ? Write its formula.

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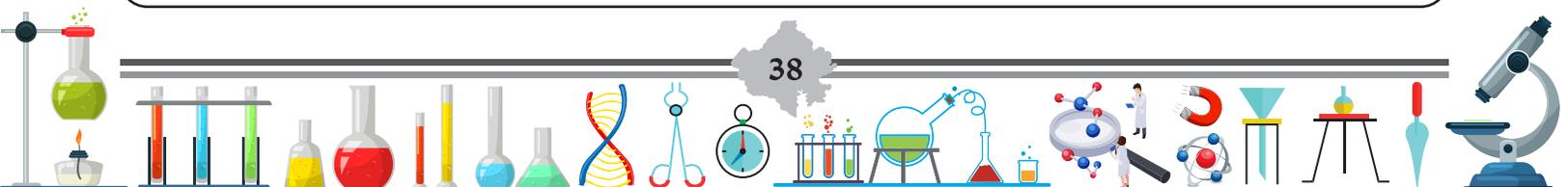
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Q 6. Which of the following terms does not represent electric power in an electric circuit ?

- (A)  $I^2R$       (B)  $IR^2$       (C)  $VI$       (D)  $\frac{V^2}{R}$       ( )

**Teacher Feedback :** \_\_\_\_\_ **Signature :** \_\_\_\_\_



# 11. Electricity

## Worksheet-37

Q 1. Write the formula of Ohm's law and name the symbols used in it.

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Q 2. Write Ohm's law.

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Q 3. Make a circuit diagram of the experimental verification of Ohm's law.

Q 4. Write the unit of specific resistance.

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Q 5. On which factors does the resistance of a conductor depend ?

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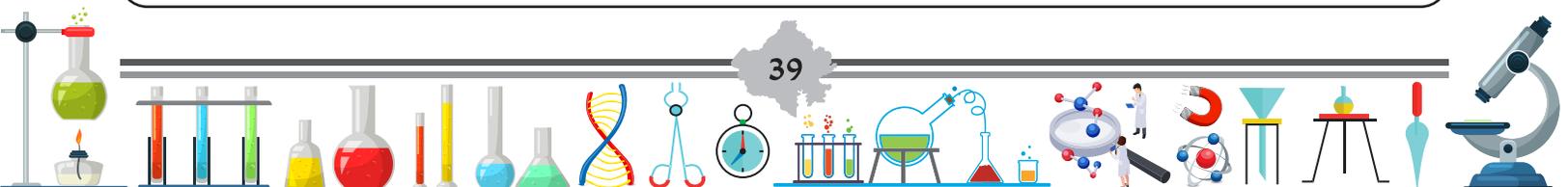
Q 6. In which order are ammeter and voltmeter connected in an electric circuit ?

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Q 7. Name the device whose symbol is  $\left[ \begin{array}{c} \pm \\ | \\ \text{---} \end{array} \right] -$

- (A) Wire junction (B) Electric cell (C) Resistant (D) Rheostat ( )

**Teacher Feedback :** \_\_\_\_\_ **Signature :** \_\_\_\_\_



# 11. Electricity

## Worksheet-38

Q 1. Write the definition and unit of electric current (I) and potential difference (V).

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Q 2. Write the formula for the relationship between electric power, potential and current.

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Q 3. How many joules are there in 1 kilowatt hour ?

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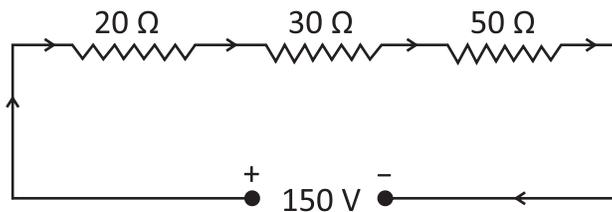
Q 4. Watt is the unit of which physical quantity ?

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Q 5. How are various electrical appliances connected in homes ?

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Q 6. In the shown figure, three resistances  $20 \Omega$ ,  $30 \Omega$  and  $50 \Omega$  are connected in series. Find their equivalent resistance and find the potential difference of  $20 \Omega$  resistance.



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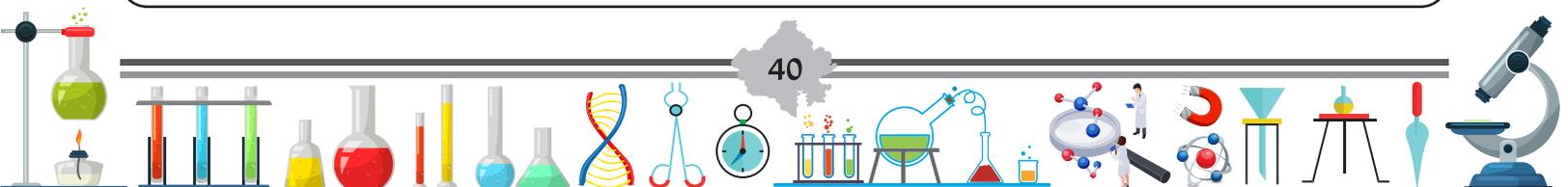
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Q 7. Find the electric current I of the circuit when the resistance  $R_1$ ,  $R_2$  and  $R_3$  are connected in parallel combination, find its equivalent resistance R also.

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Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



## 12. Magnetic Effects of Electric Current

### Worksheet-39

Q 1. Write the conclusion of Oersted's experiment.

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Q 2. Write three properties of magnetic lines of force.

(A) \_\_\_\_\_

(B) \_\_\_\_\_

(C) \_\_\_\_\_

Q 3. Define Solenoid.

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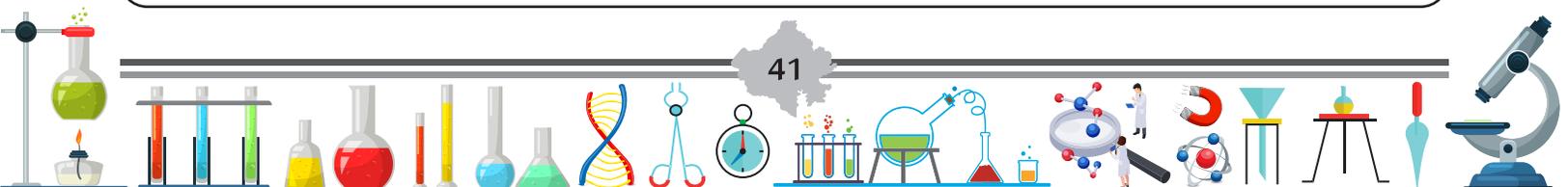
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Q 4. On which principle does an electric generator work ?

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Q 5. Draw a labelled diagram of an electric motor.

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



# 12. Magnetic Effects of Electric Current

## Worksheet-40

Q 1. Why do two magnetic field lines not intersect each other ?

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Q 2. Draw magnetic field lines due to a bar magnet.

Q 3. What is electromagnetic induction ?

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Q 4. Write the working mechanism of an electric generator.

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Q 5. What do you understand by short circuit ? write.

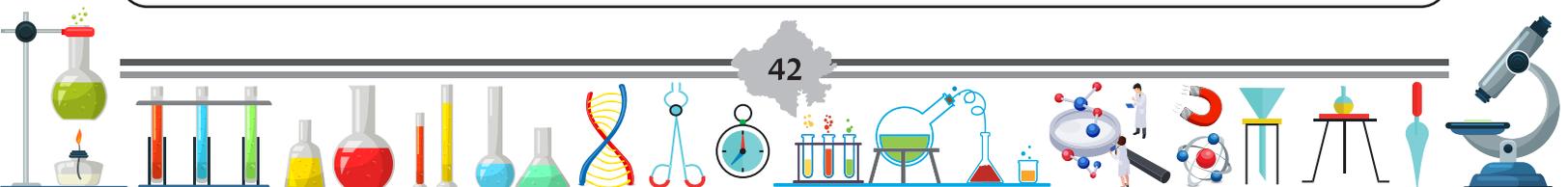
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Q 6. Electric motor converts electric energy into .....

- (A) Sound energy
- (B) Chemical energy
- (C) Kinetic energy
- (D) Solar energy

Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_



## 12. Magnetic Effects of Electric Current

### Worksheet-41

Q 1. Write three examples of electrical insulating materials.

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Q 2. Write the main function of an electric generator.

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Q 3. What is the core of an electromagnet generally made of ?

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Q 4. Write the right-hand thumb rule.

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Q 5. What is the difference between alternating and direct current generators ?

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Q 6. Explain Fleming's left-hand rule.

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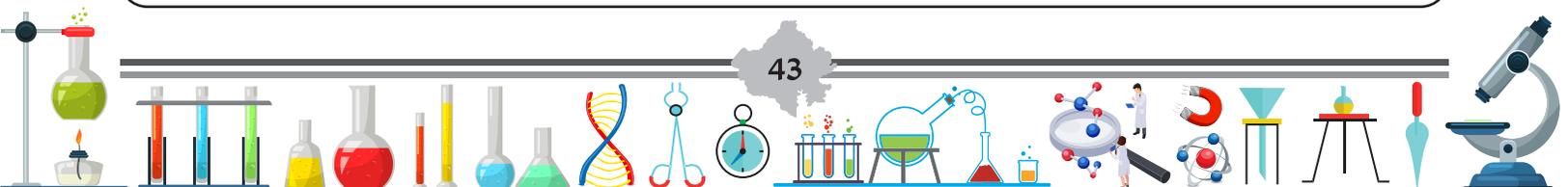
Q 7. What does it mean if 220 volt and 25 watt are marked on an electric bulb ?

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Teacher Feedback : \_\_\_\_\_ Signature : \_\_\_\_\_











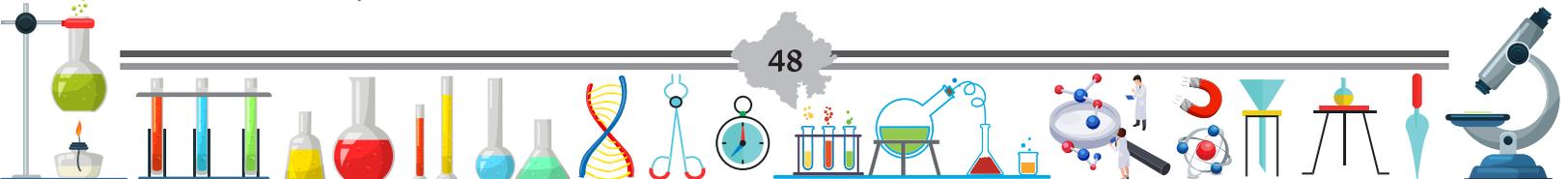
- X. The part of the human eye on which the image of an object is formed is - [1]  
 (A) Cornea (B) Iris (C) Pupil (D) Retina
- xi. The unit of resistivity is - [1]  
 (A) Ohm x meter (B) Ohm/meter  
 (C) Om (D) Meter
- xii. Which of the following is a weak acid ? [1]  
 (A) HCL (B) H<sub>2</sub>SO<sub>4</sub> (C) HNO<sub>3</sub> (D) CH<sub>3</sub>COOH

Q 2. Fill in the blanks - [6]

- All green plants and blue green algae are called as .....
- Electric generator is based on the principle of .....
- In a circuit, electric current is 1 Amp. and electric potential is 1 Volt, Then the power would be .....
- 3-4 % solution of ..... is called vinegar.
- IUPAC name of CH<sub>3</sub>OH is .....
- If energy is released in any chemical reaction, then it is said as ..... reaction.

Q 3. Very short answer type Questions - [3 × 4 = 12]

- In which actions can the response of the nervous system be classified ?
- What is a group of many cells called as, which are found in culture medium of tissue culture process ?
- There is a papaya plant planted in Rohan's house, he gives water and fertilizer regularly to it. But till date papaya has never grown on his plant, why ?
- Make a picture showing the structure formed in gram seeds after germination.
- Light enters a glass slab of refractive index 1.50 from air. What is the velocity of light in glass. (The velocity of light in vacuum is  $C = 3 \times 10^8$  m/s.)
- Write the right-hand thumb rule.
- Write Ohm's law.
- Complete the reaction -  $\text{CaCO}_3 \xrightarrow{\Delta} \dots + \dots$



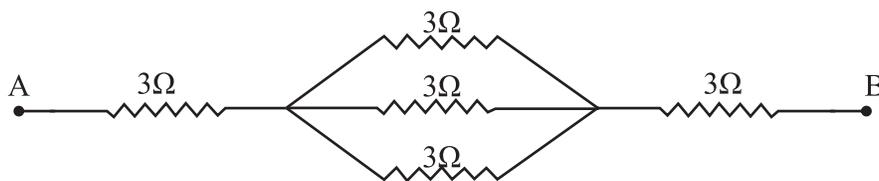
- ix. When concentrated HCl is diluted by adding water, does the pH value increase or decrease ?
- x.  $\text{CH}_2\text{CH}_2\text{OH} \xrightarrow{\text{Hot water H}_2\text{SO}_4} \text{CH}_2 = \text{CH}_2$   
How does sulfuric acid behave in this reaction ?
- xi. What do you understand by anode punk ?
- xii. Write the name of one allotrope of carbon.

### Part-B

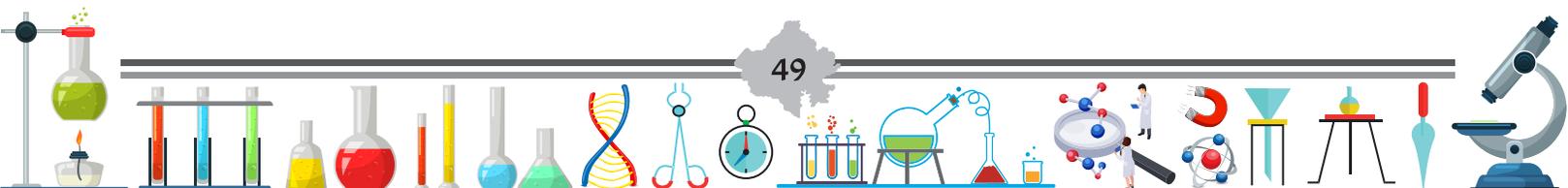
#### Short answer Questions-

[13x2=26]

- Q 4. What is the role of the acid produced in our stomach ?
- Q 5. What is plant hormone ? Write the name of each.
- Q 6. How does an organism benefit from reproduction by spores ?
- Q 7. What will happen if we kill all the creatures of one trophic level ? explain.
- Q 8. What is ozone ? And how does it affect an ecosystem ?
- Q 9. Explain the laws of refraction of light.
- Q 10. The resistance of a wire of any length  $L$ , thickness  $A$  and resistance  $4\Omega$ . What will be the resistance of another wire of the same material whose length is  $L/2$  and thickness is  $2A$  ?
- Q 11. Find the equivalent resistance of the given circuit.



- Q 12. On what principle does an electric motor work ? Make the necessary diagram.
- Q 13. What precautions should be taken to prevent overloading in domestic electrical circuits ?
- Q 14. Draw the electron dot structure of Ethane, Ethene and Ethyne.
- Q 15. Write the IUPAC names of the following -  
(A)  $\text{CH}_3\text{C} \equiv \text{CH}$                       (B)  $\text{CH}_3\text{CHO}$                       (C)  $\text{CH}_3\text{COOH}$
- Q 16. Ionic compounds have higher melting points. Why ?



## Section C

### Long answer Qs

[4x3=12]

- Q 17. What causes growth in plants ? Also make a diagram defining positive gravitropism.
- Q 18. What is heredity ? How did Mendel's experiments reveal whether traits are dominant or recessive ?
- Q 19. Define with example -
- (A) Combination reaction                      (B) Dissociation reaction
- (C) Displacement reaction
- Q 20. Draw the structure of human eye and write about its parts.

## Section-D

[3x4 = 12]

- Q 21. Name the main organ of human respiratory system ? Describe whole respiratory process by drawing its diagram -

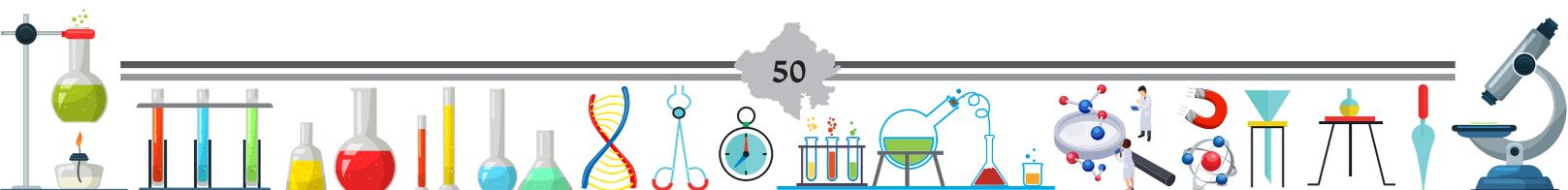
Or

- (i) What is meant by nutrition in humans ?
- (ii) Make a labelled diagram of human digestive system.
- (iii) Describe the entire digestion process.
- Q 22. Explain the chlor-alkali process graphically and also make chemical equations. Also tell which gases are emitted at anode and cathode ?

Or

Write the chemical formulas of the following -

- (A) Baking soda    (B) Washing soda    (C) Bleaching powder    (D) Plaster of Paris
- Q 23 (i) Draw the ray diagram of the image formed by a concave mirror when the object is situated at focus F.
- (ii) Write two differences between virtual and real image.
- Or
- (i) Write two differences between mirror and lens.
- (ii) Draw a ray diagram of the image formed by a convex lens when the position of the object is at infinity.



# Questions Paper - 2

## Section-A

M. M. - 80

Q 1. Multiple choice Question -

- i. The Endocrine/Exocrine gland found between the stomach and duodenum is - [1]  
(A) Pituitary (B) Pancreas (C) Adrenal (D) Thymus
- ii. Involuntary and reflex actions are controlled by - [1]  
(A) Cerebrum (B) Spinal Cord (C) Atrium (D) Ventricle
- iii. Reproduction takes place in Bryophyllum - [1]  
(A) By vegetative propagation (B) From micro Spores  
(C) Through sexual reproduction (D) All of the above
- iv. Green plants are autotrophic. [1]  
(A) Due to lipids (B) Due to DNA  
(C) Due to chlorophyll pigment (D) Due to chromosomes
- v. Main excretory organ of humans is - [1]  
(A) Skin (B) Kidney (C) Bladder (D) Rectum
- vi. Noble metals are soluble - [1]  
(A) In Concentrated HCl (B) In Concentrated HNO<sub>3</sub>  
(C) In Concentrated H<sub>2</sub>SO<sub>4</sub> (D) In Aqua regia
- vii. The pH of a neutral compound is - [1]  
(A) 7 (B) Less than 7 (C) More than 7 (D) Zero
- viii. The lightest gas among the following is - [1]  
(A) H<sub>2</sub> (B) SO<sub>2</sub> (C) NO<sub>2</sub> (D) O<sub>2</sub>
- ix. Gypsum has the formula. [1]  
(A) CaSO<sub>4</sub> · 2H<sub>2</sub>O (B) 2 CaSO<sub>4</sub> · H<sub>2</sub>O  
(C) CuSO<sub>4</sub> · 2H<sub>2</sub>O (D) CuSO<sub>4</sub> · H<sub>2</sub>O
- x. Convex mirror is used for - [1]  
(A) Torch (B) Shaving mirror  
(C) Solar furnace (D) Mirror of vehicle



- xi. If a person is unable to see distant objects clearly, what vision defect does he possibly have? [1]  
 (A) Short sightedness (B) Far sightedness  
 (C) Presbyopia (D) Cataract
- xii. How many joules (J) of energy are there in 1 unit of electrical energy? [1]  
 (A) 1 KWH (B) 100 KWH (C) 10 KWH (D) Zero KWH

Q 2. Fill in the blanks - [6x1=6]

- Green plants absorb ..... gas during respiration.
- Sodium amalgam alloy is made up of sodium and ..... metal.
- In  $\text{CO}_2$  there are ..... paired electron present.
- $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$  is a ..... reaction.
- The rate of flow of charge is called .....
- ..... is the same at all points inside the solenoid.

Q 3. Very short Question - [12x1=12]

- Reflex action is controlled by which part of the nervous system?
- What are the substances contained in the culture medium used in tissue culture?
- Generally flowers are bisexual, by what name are its male genitals known?
- What is the structure which moves upward (in the direction of light) when the seed germinates?
- What is called oxidants?
- Name two metals which are found in free state in nature.
- What is gang?
- Balance the reaction -  $\text{HNO}_3 + \text{Ca}(\text{OH})_2 \rightarrow \text{Ca}(\text{NO}_3)_2 + \text{H}_2\text{O}$
- Give an example of a double displacement reaction.
- Define lens power? Tell its SI unit.
- An electric bulb is connected to a 220 V generator. If 0.50 A current flows through the bulb, then what is the power of the bulb.
- What is the role of Split ring in electric motor?



## Section-B

[13x2=26]

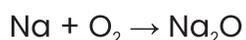
- Q 4. When the food enters the duodenum, it is transformed into an alkaline medium. Which substance causes this alkaline medium in the duodenum ? Also write the names of the enzymes secreted in the duodenum.
- Q 5. Write two characteristics of auxin and gibberellin plant hormones.
- Q 6. Explain how Non chlorophyllous plants 'FUNGI' reproduce.
- Q 7. Make a simplified diagram of the food web and explain it.
- Q 8. Explain through the equation how ultraviolet rays deplete ozone.
- Q 9. What are amphoteric oxides ? Give examples.
- Q 10. Write two uses and chemical formula of baking soda.
- Q 11. Aqueous solution of acid conducts electricity. Why ?
- Q 12. Explain the two uses of concave mirror.
- Q 13. Find the values of equivalent resistance when three resistors  $R_1, R_2, R_3$  are connected in parallel and series.
- Q 14. How much work is done in carrying 2 C charge between two points of 12 V potential difference ?
- Q 15. What is Fleming's left-hand rule ?
- Q 16. What are magnetic field lines ? Why do these lines not intersect each other ?

## Section C

### Long Answer Questions :

[4x3=12]

- Q 17. What is nutrition ? Write the types of nutrition and explain with examples.
- Q 18. Define sex determination. How is sex determined in humans ? Explain through a diagram.
- Q 19. Balance the following reaction and identify the oxidized and reduced substances.



- Q 20. What is scattering of light ? Why is the colour of clear sky seems blue ?



**Section D**

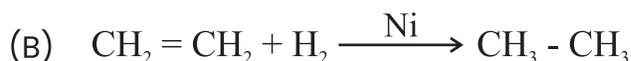
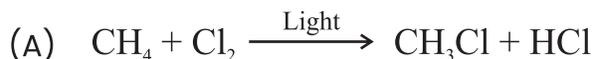
[3x4=12]

Q 21. Write the names of the major organs of the human digestive system. Explain the entire functioning of the digestive system with a diagram.

Or

Write the names of the major organs of the human circulatory system. Describe with a diagram the entire circulatory pathway flowing through the human heart.

Q 22. Write the names of the types of reactions -



Or

(A) Give the formula of bleaching powder and write its two uses.

(B) If the pH values of three solutions A, B and C were found to be 7, 4, 11 respectively, then tell which solution -

(i) is acidic ..... (ii) is alkaline ..... (iii) is neutral .....

Q 23 (i) Write the mirror formula and the formula for magnification -

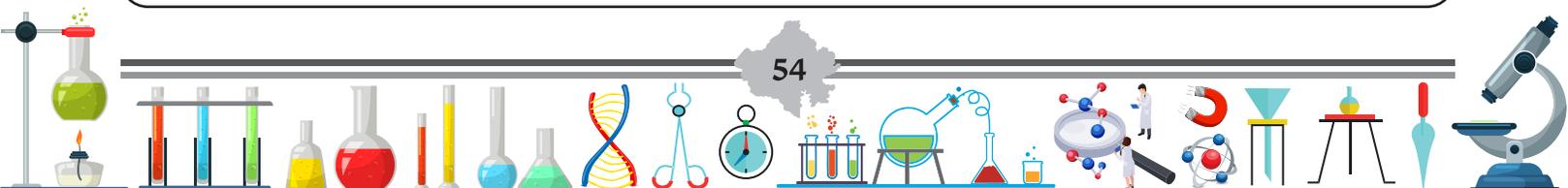
(ii) The radius of curvature of a convex mirror is 3 meter. Which is used to view the rear view in a vehicle. If a bus is there at a distance of 5 meter from this mirror, find the position, nature and size of the image.

Or

(i) Define reflection of light. Make the necessary labelled diagrams.

(ii) Draw the ray diagram for a convex mirror when the object is situated at infinity.

**Teacher Feedback :** \_\_\_\_\_ **Signature :** \_\_\_\_\_





# बेड टच/ असुरक्षित स्पर्श होने पर क्या करें ?



Shout 'NO' loudly

जोर से 'नो' या 'नहीं'  
चिल्लाओ

# NO

Run away from that

person/ place  
उस व्यक्ति/स्थान से दूर भाग  
जाओ

# GO

Tell someone trusted

किसी विश्वसनीय को  
जरूर बताओ

# TELL

ये सब करते समय अपनी सुरक्षा का ध्यान रखना चाहिए..

**Move Towards Stronger Learning Through Continuous Practice**



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