



**Government Of Karnataka  
Dakshina Kannada Zilla Panchayath**

**Department Of Public Instruction  
Dakshina Kannada**



**District Institute of Education and  
Training  
Mangalore, D.K**

**YASHA DIVIGE**

**Science Question Bank**

**SSLC**

**2021-22**

# ಮುನ್ನುಡಿ



ಶ್ರೀ ಸುಧಾಕರ್ ಕೆ  
ಉಪನಿರ್ದೇಶಕರು (ಆಡಳಿತ)

ಸಾರ್ವಜನಿಕ ಶಿಕ್ಷಣ ಇಲಾಖೆ ಮಂಗಳೂರು,  
ದಕ್ಷಿಣ ಕನ್ನಡ ಜಿಲ್ಲೆ



ಶ್ರೀಮತಿ ರಾಜಲಕ್ಷ್ಮಿ ಕೆ  
ಉಪನಿರ್ದೇಶಕರು (ಅಭಿವೃದ್ಧಿ)  
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2021-22 ಸಾಲಿನ ವಿಜ್ಞಾನ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ 10ನೇ ತರಗತಿ ಪಠ್ಯ ಕ್ರಮ ಹಾಗೂ ಪರೀಕ್ಷಾ ಪದ್ಧತಿಗೆ ಅನುಗುಣವಾಗಿ ವಿಜ್ಞಾನ ಪ್ರಶ್ನಾ ಕೋರಿಯನ್ನು ದಕ್ಷಿಣ ಕನ್ನಡ ಸಾರ್ವಜನಿಕ ಶಿಕ್ಷಣ ಇಲಾಖೆಯ ವಿಜ್ಞಾನ ಸಂಪನ್ಮೂಲ ಶಿಕ್ಷಕರು ಹಾಗೂ ಡಯೆಟ್ ಅಧಿಕಾರಿ ವರ್ಗದವರು ಸೇರಿ ರಚನೆ ಮಾಡಿರುತ್ತಾರೆ. ಈ ಕಾರ್ಯದಲ್ಲಿ ದಕ್ಷಿಣ ಕನ್ನಡ ಜಿಲ್ಲೆಯ ವಿಜ್ಞಾನ ವಿಷಯ ವೇದಿಕೆ ಶಿಕ್ಷಕರು ಸಂಪೂರ್ಣ ಬೆಂಬಲವನ್ನು ನೀಡಿರುತ್ತಾರೆ.

ಜಿಲ್ಲೆಯಲ್ಲಿ ವಿಜ್ಞಾನ ಶಿಕ್ಷಕರು ಈ ಕೈಪಿಡಿಯನ್ನು ಎಲ್ಲಾ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ತಲುಪಿಸಿ ಗರಿಷ್ಠ ಅಂಕಗಳನ್ನು ಪಡೆಯುವಂತೆ ಮಾರ್ಗದರ್ಶನ ಮಾಡಿದರೆ, ವಿದ್ಯಾರ್ಥಿಗಳು ಹೆಚ್ಚು ಆತ್ಮವಿಶ್ವಾಸದಿಂದ ಅಂತಿಮ ಪರೀಕ್ಷೆಯನ್ನು ಎದುರಿಸಬಹುದಾಗಿದೆ. ಮುಂಬರುವ SSLC ಪರೀಕ್ಷೆಯಲ್ಲಿ ಕೈಪಿಡಿಯ ಸಹಾಯದಿಂದ ವಿಜ್ಞಾನ ವಿಷಯದಲ್ಲಿ ಉತ್ತಮ ಸಾಧನೆ ಮೂಡಿ ಬರುವಂತಾಗಲಿ ಎಂದು ಹಾರೈಸುತ್ತೇನೆ. ಈ ಕಾರ್ಯದಲ್ಲಿ ತೊಡಗಿಸಿಕೊಂಡಿರುವ ಸರ್ವರಿಗೂ ಅಭಿನಂದನೆಗಳು.

ಶುಭವಾಗಲಿ

ಶ್ರೀ ಸುಧಾಕರ್ ಕೆ  
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## ನಿರ್ದೇಶನ

ಸಿಪಿಯಾನ್ ಮೊಂತೆರೋ

ಸಹ ನಿರ್ದೇಶಕರು ಹಾಗೂ ಪ್ರಾಂಶುಪಾಲರು, ಶಿಕ್ಷಕರ ಶಿಕ್ಷಣ ಮಹಾವಿದ್ಯಾಲಯ, ಮಂಗಳೂರು

## ಪರಿಕಲ್ಪನೆ ಮತ್ತು ಮಾರ್ಗದರ್ಶನ

ಶ್ರೀ ಸುಧಾಕರ್ ಕೆ, ಉಪ ನಿರ್ದೇಶಕರು (ಆಡಳಿತ)

ಸಾರ್ವಜನಿಕ ಶಿಕ್ಷಣ ಇಲಾಖೆ, ದಕ್ಷಿಣ ಕನ್ನಡ, ಮಂಗಳೂರು, ದ.ಕ

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## ಸಲಹೆಗಾರರು

ಡಾ. ಸುಮಂಗಲಾ ಎಸ್. ನಾಯಕ

ಉಪನ್ಯಾಸಕರು, ಡಯಟ್ ಮಂಗಳೂರು

ಶ್ರೀಮತಿ ಚಂದ್ರಾವತಿ ಪಿ

ಉಪನ್ಯಾಸಕರು, ಡಯಟ್ ಮಂಗಳೂರು

## ಸಹಕಾರ

ಶ್ರೀಮತಿ ಜಯಶ್ರೀ

ಅಧ್ಯಕ್ಷರು, ಜಿಲ್ಲಾ ಪ್ರೌಢ ಶಾಲಾ ಮುಖ್ಯ ಶಿಕ್ಷಕರು ಹಾಗೂ ಪ.ಪೂ ಪ್ರಾಂಶುಪಾಲರ ಸಂಘ, ದಕ್ಷಿಣ ಕನ್ನಡ

ಶ್ರೀ ಸ್ವಾಮಿ ತಾವೋ

ಅಧ್ಯಕ್ಷರು ಪ್ರೌಢಶಾಲಾ ಸಹಶಿಕ್ಷಕರ ಸಂಘ, ದಕ್ಷಿಣ ಕನ್ನಡ

# Science Question Bank Resource Formation Team

**Mr. Venkataraman Acharya**

Government Pre University College Sajipamooda  
Bantwal

**Mr. Mark J. Mendonca**

Government High School Kuppepadavu  
Mangalore South

**Mr. Subramanya. V**

Government High School Aliyoor  
Mudubidre

**Mr. Shreesha Bhat**

Government High School Koila  
Bantwal

**Mrs. Shubha Bhat**

Canara High School Mangalore  
Mangalore North

**Mrs. Prajna**

Bharath High School Ullal  
Mangalore South

**Mr. Norbert F. Miranda**

Besant National High School Kodialbail  
Mangalore North

**Mr. Raviraja Moleyar**

Government High School Dolpady  
Puttur

**Mr. Niranjan Jain**

Karnataka Public School Punjalkatte  
Belthanagady

**Roshan Pinto**

Carmel High School Modankap,  
Bantwal

**Mr. Johnson Dcunha (Rajesh)**

Naravi High School Naravi  
Belthanagady

**Mrs. Sujatha Shetty**

Government High School Mudumarnadu  
Mudubidre

**Mr. Mahendra Poojari G**

Government High School Puthila  
Belthanagady

**Mr. Pradeep Kumar**

Government High School Attavara  
Mangalore South

**Mrs. Savitha**

Government High School Erde Uppalige  
Puttur

**Mr. Sharif K. Sayad**

Government High School Naravi  
Belthanagady

**& ALL THE HIGH SCHOOL SCIENCE TEACHERS OF DAKSHINA KANNADA**

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# CHAPTER 1. Chemical Reactions and Equations

## Multiple choice questions

1) Which one is a chemical change

- A. melting of iron  
B. Rusting of iron  
C. Water is converted into ice  
D. Water is converted into steam.

2) Name the law, to be followed while we balance a chemical equation.

- A. Law of conservation of mass  
B. Newton's law of motion  
C. Fleming's right hand rule  
D. Newlands law

3)  $\text{ZnCO}_3 \longrightarrow \text{---} + \text{CO}_2$

- A.  $\text{ZnO}_2$       B.  $\text{ZnO}_3$       C.  $\text{ZnCO}$       D.  $\text{ZnO}$

4)  $\text{CuO} + \text{H}_2 \xrightarrow{\text{heat}} \text{Cu} + \text{H}_2\text{O}$  Name the type of chemical reaction.

- A. Chemical combination  
B. chemical decomposition  
C. Chemical displacement  
D. chemical double displacement

5)  $\text{N}_2 + 3\text{H}_2 \longrightarrow 2\text{NH}_3$

Name the type of chemical reaction

- A. Chemical combination  
B. chemical decomposition  
C. Chemical displacement  
D. chemical double displacement

6) Chips manufacturers usually flush bags of chips with this gas.

- A. Hydrogen      B. Oxygen      C. Nitrogen      D. Carbon dioxide

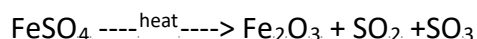
7) Name the substance used to avoid rancidity

- A. Anti-oxidant      B. Anti reductant      C. Oxidation      D. Reduction

## One mark question

1) What happens when quicklime is added to water?

2) Balance the following chemical reaction



3) In a test tube hydrochloric acid is poured over a few zinc granules. List two observations that suggest that a chemical reaction has occurred.

4) Why are decomposition reactions called the opposite of combination reactions?

5) Why is photosynthesis considered an endothermic reaction?

6) Why silver chloride is kept in dark coloured bottles?.

7) Give reasons- why do chips manufacturers usually flush bags of chips with gas such as nitrogen.

8) Give an example for balanced chemical equation of chemical combination reaction.

9) Define redox reaction

10) Iron articles are shining when new, but turn to reddish brown powder over a period of time. give reasons

11) What is rancidity?

12) What is a corrosion?

13) Why respiration is considered as an exothermic reaction.?

- 14) What is corrosion of iron called?
- 15) Why iron articles are painted? Give reason.
- 16) White silver chloride turns grey in sunlight. Give reason.

**Two marks question**

- 1) List four observations that help us to determine whether a chemical reaction has taken place.
- 2) A zinc plate was dipped into a solution of copper sulphate. After some time a brown colour layer was observed on the surface of zinc plate. Give reasons for it and write the chemical equation of the reaction involved.
- 3) Change the following statement into a chemical equation and then balance it.  
"A metal in the form of ribbon burns with a dazzling white flame and changes into a white powder."
- 4) Write balanced chemical equations for the following reactions.
  - a) silver bromide on exposure to sunlight decomposes into silver and bromine.
  - b) Sodium metal reacts with water to form sodium hydroxide and hydrogen gas.
- 5) In the following reaction name the reactants which undergo oxidation and reduction.  
$$\text{CuO} + \text{Zn} \longrightarrow \text{ZnO} + \text{Cu}$$
- 6) Identify the type of reaction in the following.
  - a)  $\text{CaO} + \text{H}_2\text{O} \longrightarrow \text{Ca(OH)}_2$
  - b)  $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \longrightarrow \text{BaSO}_4 + 2\text{NaCl}$
- 7) Draw a neat labelled diagram of electrolysis of water.
- 8) What are anti-oxidants? Why are they added to fat and oil containing food?
- 9) Differentiate between exothermic reactions and endothermic reactions with examples.
- 10) Why is corrosion of iron a serious problem? Explain.
- 11) Write the difference between chemical combination and chemical decomposition with an example.
- 12) How can we prevent corrosion of iron?

**Three or four marks question**

- 1) Mention three types of decomposition reaction along with the balanced chemical reaction.
- 2) Write the chemical equation of the reaction with an example each in which the following change has taken place.
  - a) changing colour
  - b) change in temperature
  - c) formation of precipitate
- 3) Identify the type of chemical reaction in the following statements and define each of them.
  - a) Digestion of food in our body
  - b) Rusting of iron.
  - c) Blue colour of copper sulphate solution disappears when iron filings are added to it.

- 4) a) List any two changes which take place when oily food gets oxidized.  
b) mention the measure which prevents or slow down its oxidation.
- 5) What is meant by precipitation reaction? Explain by giving an example.
- 6) A solution of copper sulphate was kept in an iron pot. After few days the iron pot was found to have a number of holes in it. Explain the reaction with the help of a chemical equation.
- 7) Write balanced equation for the following reactions and also name the type of chemical reaction in each case.
- a) Magnesium ribbon is burnt in air.  
b) limestone is heated.
- 8) Explain chemical displacement reaction and chemical double decomposition reactions with an example.
- 9) In the electrolysis of water,
- a) Name the gases collected at the cathode and anode respectively.  
b) Why is the volume of one gas collected at one electrode is double with respect to the other?  
c) How will you test the evolved gases?
-



## CHAPTER 2. ACIDS, BASES AND SALTS

### Objective type questions:

- 1) The pH range most conducive for life of fresh water plants and animals is  
a) 6.5-7.5    b) 2.0-3.5    c) 3.5-5.2    d) 9.0-10.5
- 2) Which one of the following is acidic in nature  
a) Gastric juice    b) NaOH    c) Lime water    d) Blood plasma
- 3) Chemical formula of Plaster of Paris is  
a)  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$     b)  $\text{CaSO}_4 \cdot \text{H}_2\text{O}$     c)  $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$     d)  $2\text{CaSO}_4 \cdot \text{H}_2\text{O}$
- 4) Baking Soda is a mixture of  
a) Sodium Carbonate and Acetic acid  
b) Sodium Carbonate and Tartaric acid  
c) Sodium Hydrogen Carbonate and Acetic acid  
d) Sodium Hydrogen Carbonate and Tartaric acid
- 5) A solution turns red litmus blue, its pH is likely to be  
a) 1    b) 4    c) 5    d) 10
- 6) Which of the following substances can be used to get relief from Bee sting  
a) Vinegar    b) Baking Soda    c) Formic acid    d) Alcohol
- 7) Which of the following acids is present in sour milk  
a) Glycolic acid    b) Oxalic acid    c) Lactic acid    d) Citric acid
- 8) Plaster of Paris is a  
a) White powder    b) Yellow powder    c) Grey powder    d) Pink powder
- 9) This is used in Soda-Acid fire extinguishers  
a) Washing Soda    b) Bleaching Powder    c) Baking Powder    d) Plaster of Paris
- 10) This is used as Olfactory indicators  
a) Litmus    b) Phenolphthalin    c) Vanilla    d) Methyl orange

### One Mark Questions

- 11) A white shirt with yellow stain of curry. turns to reddish- brown when rubbed by the soap. why.? Give reasons.
- 12) Give 2 examples for natural indicators
- 13) What are Olfactory indicators?
- 14) what is Neutralisation?
- 15) Name the gas liberated when metals react with acids.
- 16) what is dilution?
- 17) What is Acid rain?
- 18) Write the chemical name of baking soda .
- 19) Mention any one use of Washing soda.
- 20) Sodium Hydrogen Carbonate is used as antacid. Give reasons.

### TWO MARK QUESTIONS

- 21) Distinguish between acids and bases .
- 22) How does acid react with metals.
- 23) Write a reaction of metallic oxide with acids
- 24) How does bases react with non metallic oxides
- 25) Name the natural acids present in the following natural sources  
a) vinegar    b) Lemon    c) tomato    d) Curd
- 26) Draw a figure showing acid solution in water conducts electricity.
- 27) Mention any two uses of Bleaching powder.
- 28) Mention any two uses of Plaster of Paris
- 29) Write the chemical reaction of manufacturing bleaching powder.

30) Write the chemical formula of sodium hydroxide and write any one use of it.

### THREE MARK QUESTIONS

31) Explain the experiment showing that metals react with acids and liberate hydrogen gas.

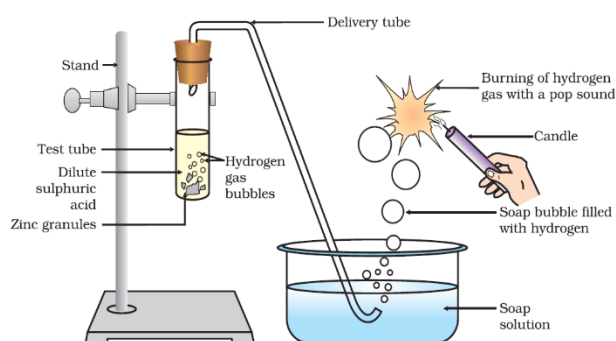
32) What are the precautions to be taken while adding acid and bases to water?

33) What happens if the pH of the mouth is lower than 5.5. Explain.

34) Draw a neat diagram and label the parts that showing the reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning.

### FOUR MARK QUESTIONS

35) In the below given diagram, liberation of hydrogen gas is shown.



What happens if

a) Zinc granules are replaced by zinc powder

b) dilute HCl is used in place of dilute  $H_2SO_4$

c) Copper is used instead of zinc

d) Sodium hydroxide is taken in test tube instead of dilute  $H_2SO_4$ .

36) Answer the following

a) Name a base that is soluble in water

b) Name the reaction between acid and base that gives salt and water.

c) Name the substance that gives  $H^+$  ions in water

d) Name the substance that gives  $OH^-$  ions in water.

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## CHAPTER 3. METALS AND NONMETALS

### Multiple Choice Questions:

1. Among the following elements, allotropy is exhibited by,  
A) Carbon    B) Iodine    C) Oxygen    D) Nitrogen
2. Example for a liquid metal is,  
A) Mercury    B) Bromine    C) Carbon    D) Helium
3. Group of metals that can be cut by a knife is,  
A) Sodium and Iron    B) Sodium and Potassium  
C) Potassium and Gold    D) Magnesium and Potassium
4. An example for an amphoteric oxide is,  
A) Sodium Oxide    B) Zinc Oxide    C) Ferrous Oxide    D) Cuprous Oxide
5. A surface layer of a compound formed on Aluminium when it is exposed to air is called as,  
A) Aluminium Carbonate    B) Aluminium Sulphate  
C) Aluminium Oxide    D) Aluminium Hydroxide
6. To make a very long metallic wire of a specific weight, the following metal that we can suggest is,  
A) Iron    B) Gold    C) Copper    D) Aluminium
7. The electronic Configuration of 'X' is 2, 8, and 1 and 'Y' is 2, 8, and 7. The chemical bond that can be formed between them is,  
A) Ionic Compound    B) Metallic Bond  
C) Covalent Bond    D) Hydrogen bond
8. The oxide that is liberated when metals react with nitric acid is,  
A) Hydrogen    B) Sulphur Dioxide  
C) Carbon Oxide    D) Nitrogen Oxide
9. The correct order of writing metals in the descending order of their reactivity is,  
A) Na>Mg>K>Ca    B) K>Na>Ca>Mg    C) K> Ca>Na>Mg    D) Mg >Na>Ca>K

### 1 Mark Questions:

1. What is sonorous?
2. What is metallic lustre?
3. Aluminium metal is not completely affected by corrosion. Why?
4. Silver and Gold don't react with oxygen even under high temperature. Why?
5. Write the equation of Potassium's reaction with water.
6. Write the equation of Calcium's reaction with water.
7. Calcium does not burn when it reacts with water. Why?
8. Why do Magnesium and Calcium float when they react with water?
9. Write the reason for the solid state of ionic compounds.
10. The boiling and melting points of ionic compounds are high. Why?
11. Give examples of organic solvents.
12. Ionic compounds are good conductors of electricity in their solid state. Give reasons.

### 2 Mark Questions:

1. List out the physical properties of metals.
2. List out the physical properties of nonmetals.
3. Differentiate between Ductility and Malleability.
4. Explain the reaction of metals with oxygen using chemical equations.
5. What is an amphoteric oxide? Give an example.
6. How are alkalis formed? Write the equation.
7. Sodium and Potassium are kept in kerosene. Give scientific reasons.
8. Write the chemical equation of Sodium's reaction with water.

9. Write the chemical equations of reactions of Aluminium and Iron with water vapour.
10. Nitric acid does not liberate hydrogen upon its reaction with metals. Why?
11. Write the dot structure of the formation of ionic bond in Magnesium Chloride.
12. Draw and label the diagram of metal's reaction with water vapour.
13. Draw and label the diagram of testing the conductivity of saline solution.
14. Write the character of metal used in the making of the following things.
  - a) Making of Bells
  - b) Making of electric wires
15. Saline solution is a good conductor of electricity whereas salt is an insulator in solid state. Give reasons.

**3 Mark Questions:**

1. Explain the formation of ionic bond in Sodium Chloride using dotted structure.
2. What are ionic compounds? List out the properties of ionic compounds.

## CHAPTER 4. CARBON AND ITS COMPOUNDS

- Ethane with molecular formula  $C_2H_6$  has  
A. 6 covalent bonds    B. 7 covalent bonds    C. 8 covalent bonds    D. 9 covalent bonds
- Butanone is a four Carbon compound with the functional group  
A. Carboxylic acid    B. Aldehyde    C. Ketone    D. Alcohol
- Name of the organic compound having molecular formula  $CH_3CH_2Br$   
A. Bromoethane    B. Chloroethane    C. Ethanal    D. Ethanone
- Cyclopentane has the molecular formula of  
A. 5 Covalent bonds    B. 10 Covalent bonds    C. 15 Covalent bonds    D. 12 Covalent bonds
- Common difference between members of homologous series  
A.  $-CH_2$     B.  $-CH$     C.  $-CH_4$     D.  $-C_2H_5$
- Carbon has the unique ability to form bonds with other atoms of carbon, giving rise to molecules. This property is called  
A. Isomerism    B. Tetra Valency    C. Catenation    D. Allotropy
- The molecular formula of benzene is  
A.  $C_5H_{12}$     B.  $C_6H_{12}$     C.  $C_6H_6$     D.  $C_6H_{10}$
- The number of single bonds present in the structure of a cyclohexane molecule  
A. 12    B. 18    C. 24    D. 6
- The correct group of saturated hydrocarbons  
A.  $CH_4, C_2H_4, C_3H_4$     B.  $C_2H_2, C_2H_6, CH_4$     C.  $C_2H_6, C_3H_8, C_4H_{10}$     D.  $C_2H_2, C_3H_6, C_4H_6$
- The minimum number of electrons required to form trivalent bond between two atoms  
A. 4    B. 8    C. 2    D. 6
- General formula of alkynes  
A.  $C_nH_{2n+2}$     B.  $C_nH_{2n}$     C.  $C_nH_{2n-2}$     D.  $C_nH_{2n-1}$
- The compounds having same molecular formula but different structural arrangements are called  
A. Allotropes    B. Nonmetals    C. Isomers    D. Isotopes
- Electron dot structure of Hydrogen is  
A.  $H:H$     B.  $O:O$     C.  $H::H$     D.  $O::O$

### 1 MARK QUESTIONS

- What are homologous series?
- Write the structural formula of Benzene.
- Name the following organic compounds  
 $CH_3CH_2Br$     (B)  $HCHO$
- Write the I.U.P.A.C name of Acetic acid.
- Write the difference between the molecular mass of  $CH_3OH$  and  $C_2H_5OH$ .
- Write the structural formula of butane.
- What is catenation?
- What is the functional group of ketones?

### 2 MARKS QUESTIONS

- What is isomerism? Write the structural isomers of butane
- What is a functional group? Give examples.
- Give one example each for an Alkane, Alkene and Alkyne
- Distinguish between saturated and unsaturated hydrocarbons.

26. Write the molecular formula and structural formula of an alkane, alkene and alkyne with 3 carbon atoms.
27. Give example for an organic compound with functional group
- (A) OH  
(B) COOH  
(C) CHO  
(D) CO
28. Why carbon does not form ionic bond?
29. Write the structure of following hydrocarbons  
a) Propane b) Propene c) Propyne d) Cyclo Propane
30. Why carbon does not form  $C^{4+}$  cation?
31. Write electron dot structure for the following  
Ethane, Methane
32. Write the structure of Cyclohexane and Benzene
33. Which functional group is present in this hydrocarbon?  
a) Propanol b) Propanone c) Propanal
34. List the properties of homologous compounds?

### 3 MARKS QUESTIONS

35. Distinguish between Alkane, Alkene and Alkyne.
36. Write electron dot structure for the following  
Ethane, Methane, Ethene

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## CHAPTER 5. Periodic Classification of elements

### Each question carries 1 mark

1. How many elements are discovered in the nature? How many of them are naturally available?
2. Initially how did they classify the elements?
3. Classification on the basis of states of matter cannot be justified? give reason
4. Who did the first attempt to classify the Elements?
5. State Dobereiner's "Law of Triads"
6. Express Dobereiner's law of triads mathematically
7. State Newlands' law of octaves
8. State Mendeleev's periodic law
9. How many elements were known during the time of Mendeleev's ?
10. How many periods and groups are there in Mendeleev's periodic table?
11. Besides gallium, which other elements have since been discovered that were left by Mendeleev in his periodic table.
12. Did Dobereiner's triads also exist in the columns of Newlands octaves?  
Compare & comment
13. Mendeleev's work of periodic table can be regarded as an insight full work why?
14. State modern periodic law
15. How many periods and groups are there in the modern periodic table ?
16. What do the periods & groups represent in the modern periodic table
17. What are periods and groups ?
18. Name the elements in the first period of periodic table
19. Name the metalloids
20. What is the relationship between Atomic size and Ionisation Energy?
  21. How does metallic nature vary across the period and down the group?
  22. In which part of the periodic table do we find mostly non – metals.
  23. What is the (SI) Unit of Atomic Radius?
  24. Who is known as the Father of Periodic Table?
  25. Which criteria is used to construct Mendeleev Periodic table?
  26. Who constructed modern Periodic Table?
  27. Which criteria is used in the construction of Modern Periodic table?
  28. Why the elements Hydrogen and Oxygen is given more importance in Mendeleev's Periodic Table?
29. In the Mendeleev's Periodic Table the inert gases like helium, Neon, and Argon are discovered late. Give reason

### Each question carries 2 marks

30. The atomic mass of an element X is 40 amu and atomic mass of an element Y is 500 a.m.u find the atomic mass of element Z
31. What were the limitations of Dobereiner's classification ?
32. What were the limitations of Newlands' classification of elements ?
33. What are the merits or advantages of Mendeleev's periodic table?
34. What are the limitations or demerits of Mendeleev's periodic table?
35. Name the first element in the modern periodic table. Why it is kept in first group?
36. Name the first 20 elements in the modern table
37. Name all the inert gases. why are they kept in the 18<sup>th</sup> or Zero<sup>th</sup> group?
38. Name the elements of 18<sup>th</sup> or zero<sup>th</sup> group ?

39. What are Isotopes? Give Examples
40. Name the Elements in the second period of periodic table
41. Name the Elements in the third period of periodic table
42. What are the trends of modern periodic table?
43. What are metalloids? Give Examples
44. Atomic mass is not useful to construct the periodic table? Give reason with an example.
45. Gases in 18<sup>th</sup> group have valency Zero. Give reason.
46. Lithium, Sodium, Potassium is an example for Dobereiner's triad. If the atomic mass of lithium and potassium is 7 and 39 respectively what is the atomic mass of sodium?
47. Nine elements in the increasing order of atomic mass are given below  
F, Na, Mg, Al, Si, P, S, Cl, K. Apply Newlands' law of octaves and Identify the two pairs of Similar elements
48. How could the Modern Periodic Table remove various anomalies of Mendeleev's Periodic Table?
49. Write the differences between Mendeleev Periodic and Modern Periodic table?

**Each Question carries 3 Marks each**

50. What is meant by atomic size of an atom? How does atomic size vary across the period and down the group. Justify your answer
51. What is meant by Ionisation Energy? How does it vary across the period and down the group? Justify your answer
52. What is meant by Electro-positivity? How does it vary across the period and down the group. Justify your Answer?
53. What is meant by Electro-negativity? How does it vary across the period and down the group? Justify your answer?
54. Why and how was Mendeleev's periodic law changed? The elements of the second group of modern periodic table are given as, Beryllium, Mendeleev's, calcium, strontium, Barium, Radium
- a) What is the formula of barium oxide if the formula of magnesium oxide is MgO?
- b) Which element has highest atomic size?
55. An extract of modern periodic table is given below using this extract answer the following questions

Group ↓	Period →	
	Na	Mg
	K	Ca

- i) Which element has the smallest atomic radius?
- ii) Which element has highest metallic nature?
- iii) Which element has the highest atomic radius? Give reasons for your answers?

**Each Question carries 4 marks each**

56. Position of 10 elements in the modern periodic table is given below.



A: Answer the following questions based on this table. Justify your answer

Carbon At. No 6	Nitrogen At. No. 7	Oxygen At. No. 8	Fluorine At. No. 9	Neon At No. 10
Silicon At. No. - 14	Phosphorus At. No. 15	Sulphur At. No. 16		
Germanium At. No. 32				
Tin At. No. 50				

1. Identify the element that has highest atomic radius
2. Identify the period number of oxygen
3. Identify the group number of neon
4. If the molecular formula of nitrogen trioxide is  $N_2O_3$  what is the molecular formula of oxide of phosphorous?  
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## CHAPTER 6. LIFE PROCESSES

### MULTIPLE CHOICE QUESTIONS

- The importance of stomata in transportation
  - to create upward pull
  - to absorb carbon dioxide
  - to release oxygen
  - to perform transpiration continuously
- The Muscle cells produce Lactic acid during following condition
  - In the presence of atmospheric oxygen
  - In the absence of atmospheric oxygen
  - Due to the lack of oxygen
  - None of the above

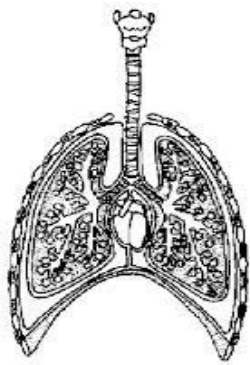
### One mark questions.

- What is Plasma?
- Mention the function of Plasma.
- Which pigment is responsible for the transport of nutrients, respiratory gases, metabolites hormones and waste products.?
- Why is Plasma of blood straw coloured?
- Define translocation.
- Write one function of blood platelets in human beings.
- Name the tissue which transports soluble products of photosynthesis in a plant.
- Name the tissue which transports water and mineral in plant.
- Why is urine yellow in colour.
- Name excretory products of animals.
- Name excretory products of plants.
- Name the process by which plants expel excess water
- What is the function of phloem sieve tubes in plants?
- Do changes occur when xylem tissue is removed from the plants?
- Why are the carbohydrates stored in the root and stem tissues be transported to the buds during the summer?
- What technique does plant use to make water move higher in plants?
- Why the energy requirement in plants is less than the animal needs.
- On what basis is the amount of water that the nephron resurfaces?

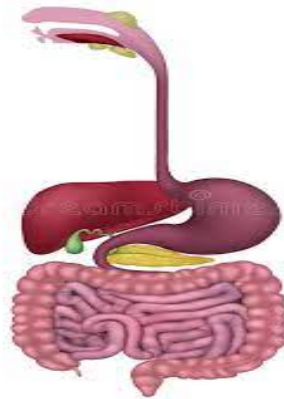
### 2-Marks questions.

- What is the importance of transpiration?
- Explain the methods of disposal of waste materials in plants.
- Explain the process Clotting of blood.
- White blood corpuscles are considered as soldiers of the body.
- Why there is no mixing of oxygenated and deoxygenated blood in human heart normally?
- Why are the walls of ventricles thicker than the auricles?
- State the two vital functions of the human kidney. Name the procedure used in working of artificial kidney.
- Name the passage in sequence through which urine passes from Kidneys to the outside in humans how is urine prevented from flowing back into the uterus?
- In mammals and birds why is it necessary to separate oxygenated and deoxygenated blood?
- Mention the three kinds of cells present in blood. Write one function of each.

29. What similarity is observed in the structure of A & B with respect to their function



A



B

30. Why it is necessary to separate oxygenated and deoxygenated blood in mammals and birds?
31. What are the components of the transport system in highly organised plants?
32. List the three kinds of blood vessels in human circulatory system and write their functions.
33. Blood passes in heart of the fish only once during one cycle.
34. What is lymph?
35. Write the functions of Lymph.
36. Transport system in plants is very slow. give scientific reasons
37. What is blood pressure? How is it measured?
38. Mention different functions of Kidneys.
39. How are ureters playing important role in the excretion of urine?
40. What is the main function of urinary bladder?
41. Describe urine formation in Kidneys.
42. Draw a neat diagram to show human excretory system and label any four parts.
43. How does aerobic respiration differ from anerobic respiration?

#### Three Marks Questions

44. How is the end conditions given below product of nutrition glucose breaks down among all the organisms under the
- In the presence of atmospheric oxygen
  - In the absence of atmospheric oxygen
  - In the muscle cells due to lack of oxygen
45. Explain the methods of
- Oxygen supply to the cells
  - Release of Carbon dioxide to the atmosphere from the cells during the process of transportation in humans
46. How does oxygenated blood circulated throughout the body form respiratory organs

#### Four marks Questions

47. a) Mention the importance of transpiration in plants  
b) What are the methods used by plants to get rid of excretory products?
48. Draw a neat diagram of L.S. of human heart and label the following parts  
a) The cavity which stores oxygenated blood    b) Aorta

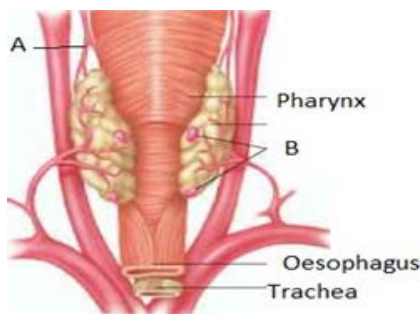
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## CHAPTER 7. CONTROL AND COORDINATION

1. Why is oxytocin called as "birth hormone"?
2. A Farmer is having a big guava farm; he wants big and healthy fruits to improve his economy. What hormones should be use and Why?
3. Why are some patients of diabetes treated by giving injection of insulin?
4. What type of plant hormone is seen in the diagram of coiling of tendrils? Or How do auxins promote the growth of a tendril around a support?



5. Identify and label the parts of shown as A and B in accompanying figure



6. A young green plant receives sunlight from one direction only. What will happen to its shoots and roots?
7. A student while watering a rose plant, a thorn pricked to her hand. How would she respond to this situation? Provide the term for such a response.
8. A boy runs on seeing a stray dog. His breathing becomes very fast and blood pressure also increases. Name the hormone to be high in his blood and the gland which produces it.
9. In case of a spinal cord injury, identify the signals that will be disrupted.
10. A man has met with an accident. After that he has lost the capacity to (i) walk in straight line (ii) smell anything (iii) Does not feel full after eating. Which part of brain is damaged in each case?
11. How does our body respond when adrenaline is secreted into blood?
12. a) If the cerebellum is not functioning properly, state the activities of our body that are affected

b) How do muscle cells move?

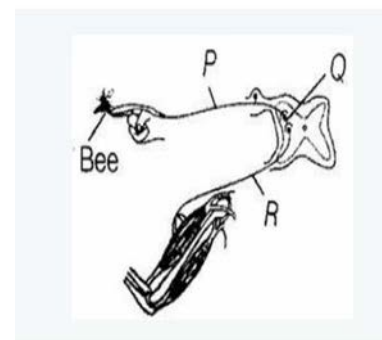
13. After consuming lot of alcohol, a man could not walk properly and was omitting. His friend stopped his car and tried to help him by dropping him home (a) which part of the brain gets affected by consuming alcohol? (b) Which part of nervous system controls and reflex action? (c) Which two values are shown by his friend helping him
14. For a receiving badminton player, what is the path from the stimulus to the response?



15. The 2 glands A and B which occur in pairs are present in endocrine system. The pair of glands A is found only in females whereas the pair of glands B occurs only in males. The gland A make and secrete hormone C whereas gland B make and secrete hormone E. in addition to hormone. Gland A male gamete F whereas gland B makes gamete G.

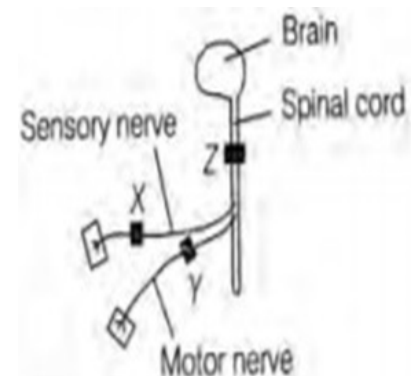
- A) What are the glands A and B?  
B) Name the hormone C and E  
C) Name the gamete F and G

16. The diagram shows a reflex arc in which a bee sting causes the arm to be moved quickly. If the relay neuron is damaged, how will the transmission of nerve impulses in the reflex arc are affected?



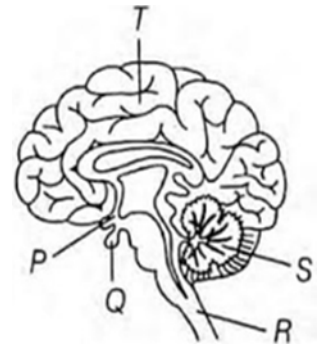
- a) Impulses cannot pass from P – Q  
b) Impulses cannot pass from P – R  
c) Impulses cannot pass from Q – P  
d) Impulses cannot pass from R – Q

17. The diagram shows the central nervous system, which has been blocked in three different places by a drug used an anaesthetic. Three men had on anaesthetic block at X, Y or Z. One of the men can move his leg in response to a pin prick, but does not feel it. Where is the anaesthetic block in this Man?
- a) At X    b) At Y    c) At Z    d) No block



18. In the following are functions associated with these parts as P, Q, R, S and T

<i>Parts of brain</i>	<i>functions</i>
<i>P</i>	<i>Master hormone producers</i>
<i>Q</i>	<i>Controls body temperature</i>
<i>R</i>	<i>In conscious behavior</i>
<i>S</i>	<i>Helps to control the body balance</i>
<i>T</i>	<i>In unconscious behavior</i>



Which part of the brain is matched with correct function and find out the correct the mismatched.

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# CHAPTER 8. How do Organisms Reproduce?

## 1Marks Questions

1. What is zygote?
2. What is pollination?
3. What is self-pollination?
4. What is cross pollination?
5. Name the medium by which cross pollination taking place.
6. What is fertilization?
7. What is germination?
8. What is the reason for the bodily changes take place during the puberty in boys?
9. What is the roll of testosterone?
10. Name the female gamete?
11. Name the part which produces an egg.
12. Which gamete is produced by the ovary?
13. Which hormone is produced in the ovary?
14. What is the reason for the bodily changes take place during the puberty in girls?
15. What is placenta?
16. Name the microorganism which is responsible for the Gonorrhoea?
17. What is puberty?
18. What function does urethra perform in male?

## 2 Marks questions

1. What is the advantage of sexual reproduction?
2. What is the roll of DNA replication in reproduction?
3. Why does menstrual cycle taking place?
4. What changes taking place during the puberty in girls?
5. What changes taking place during the puberty in boys?
6. What is the function of seminal vesicles?
7. Name some of the diseases transmitted sexually?
8. A woman is using copper-T, weather it helps to protect her from the sexually transmitting diseases?
9. Name the sexually transmitting diseases and their causative organisms.

10. Write the structure and function of placenta?
11. What are the methods of contraception?
12. What happens if egg is not fertilized?
13. Why it is offensive to detect the sex of the foetus?
14. What is a unisexual and bisexual flower?
15. Why the testis is found in the scrotum out of the abdominal region?

### **3 Marks questions**

1. What is the difference between male and female gamete?
2. What are the different methods of contraception? Explain.
3. What are the reasons to adopt the contraceptive methods?
4. What changes are observed in flowers after fertilization?
5. What are the advantages for the plants by the formation of seeds?

### **4 Marks questions**

1. What are the parts of the male reproductive system? What are their functions?
2. What are the difference parts of the female reproductive system? What are their functions?
3. Explain the structure and function of reproductive parts if flowering plants?

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## CHAPTER 9. HERIDITY AND EVOLUTION

### Very short answer type questions (1 mark)

1. Define variation.
2. What is Heredity?
3. What is monohybrid cross?
4. Who is the father of genetics?
5. Why is the progeny always tall when a tall pea plant is crossed with a short plant?
6. Name the genetic material that is responsible for inheritance of traits.
7. What is speciation?
8. What are dominant genes?
9. What is the scientific name of human being?
10. What are fossils?
11. Name two human traits which show variations
12. What is evolution?
13. Write the scientific name of man and garden pea?

### Short answer type questions (2 mark questions)

14. Why did Mendel selected pea plants for conducting his experiments on inheritance?
15. Define homologous organs.
16. How do embryological studies provide evidence for evolution?
17. What are fossils? What do they tell us about the process of evolution?
18. How is the equal genetic contribution of male and female parents ensure in the progeny?
19. Why are traits acquired during the life-time of an individual not inherited?
20. Give reason why acquired characters are not inherited.
21. Why are traits acquired during the life-time of an individual not inherited?
22. Will geographical isolation be a major factor in the speciation of an organism that reproduces asexually? Why or why not?
23. Can the wing of a butterfly and the wing of a bat be considered homologous organs? Why or why not?
24. Why is variation beneficial for the species, But not necessarily for the individual?
25. What are the different ways in which individuals with a particular trait may increase in a population?
26. Can the wing of a butterfly and the wing of a bat be considered homologous organs? Why or why not?
27. What factors would lead to the rise of a new species?

### Long answer type questions

28. State and describe in brief any three main factors responsible for the rise of a new species.
29. With the help of suitable example explain natural selection.
30. How does the creation of variations in a species promote survival ?
31. List three roles of fossils in tracing evolutionary relationship
32. How do Mendel's experiments show that traits may be dominant or recessive ?
33. How do Mendel's experiments show that traits are inherited independently ?

34. How is the sex of the child determined in human beings ?

OR

“The sex of a new-born child is a matter of chance and none of the parents may be considered responsible for it.” Justify this statement with the help of a flow chart showing determination of sex of a new-born.

What factors would lead to the rise of a new species?

35. In evolutionary terms, can we say which among bacteria, spiders, fish and chimpanzees have a ‘better’ body design? Why or why not?

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## CHAPTER 10. Light – Reflection and Refraction

### One mark questions

1. Define law of reflection
2. What is pole of mirror?
3. Define focal length
4. Write the mirror formula
5. Why does a glass rod partially immersed in water appear to be bent? Give reason.
6. What is refraction of light ?
7. What is the cause for refraction of light?
8. Name the phenomenon in which light changes its straight line path when it travels from one transparent medium to another.
  
9. Name the phenomenon due to which a swimming pool appears less deep than it really is.
10. When a ray of light passes from air into glass, is the angle of refraction greater than or less than the angle of incidence ?
11. State Snell's law.
12. Define refractive Index.
13. Define absolute refractive index.
14. If a ray of light travels from medium A to medium B, bends towards the normal, then which among the two media can be called rarer medium?
15. The refractive index of ice is 1.31. What is the meaning of this statement?
16. The refractive index of glass is more than the refractive index of water. In which of these two media, light travels the fastest?
17. If the refractive index of water for light going from air to water is 1.33, what will be the refractive index for light going from water to air ?
18. Which are the two types of lenses ?
19. Name the following. i) The lens which converges the light rays.  
ii) The lens which diverges the light rays.
20. A 3cm high object is placed at a distance of  $2f$  from a convex lens. What is the height of the image formed?
  
21. Where should an object be placed in order to use a convex lens as a magnifying lens?
22. A boy fixes a magnifying lens to a plant and goes out to play. After some time, the dry leaves fallen near the plant are found to burn. What is the cause for this?
23. Define power of a lens.
24. What is the SI unit of power of a lens?
25. Define 1 Dioptre power of a lens.
26. How is power of a lens related to its focal length?
27. Which has more power : A thin convex lens or a thick convex lens made of the same glass. Give reason for your choice
28. Which type of lens is an air bubble inside the water? Give reason for your answer.

29. Calculate the power of a lens whose focal length is 5cm.
30. The magnification of a convex lens is 2. What is the meaning of this statement ?
31. Which are the letters (alphabets) used in a ray diagram/ are related to a lens and what do they represent ?
32. Write the lens formula.
33. Where is the image formed if an object is placed at the focus of a convex lens ?
34. Where should an object be placed so that area land inverted image of the same size is obtained by a convex lens ?

### Two marks questions

35. Write the difference between concave and convex mirror
- 36 Write any two uses of concave mirror
- 37 rite any two uses of convex mirror
- 38 Define the following terms related to a spherical lens.
  - a)optical centre
  - b)focal length
  - c)principal axis
39. Define principal focus of a concave lens and represent it through a ray diagram.
- 40 A ray of light travelling in air enters obliquely into water. Does the light ray bend towards the normal or away from the normal? Why?
- 41 State the laws of refraction of light ?
- 42 A beam of light passes from air into a substance X. If the angle of incidence is  $60^\circ$  and angle of refraction is  $30^\circ$ . Calculate the refractive index of substance X ?
- 43 Light enters from air in to glass plate having refractive index 1.50. What is the speed of light in glass ?
- 44 A boy had gone to an optician for an eye test. He prescribed a corrective lens of power - 2.8 D for the boy. What type of lens is this? Find its focal length.
- 45 Mention the differences between a convex lens and a concave lens.
- 46 Mention the differences between real images and virtual images  
Mention the sign convention for spherical lenses.
- 47 Draw a ray diagram to show the formation of image of an object placed at infinity from a convex lens and mention the characteristics of image formed.
- 48 Draw a ray diagram to show the formation of image of an object placed beyond  $2F_1$  of a convex lens and mention the characteristics of image formed.
- 49 Draw a ray diagram to show the formation of image of an object placed at  $2F_1$  of a convex lens and mention the characteristics of image formed.
- 50 Draw a ray diagram to show the formation of image of an object placed between  $2F_1$  and  $F_1$  of a convex lens and mention the characteristics of image formed.
- 51 Draw a ray diagram to show the formation of image of an object placed at  $F_1$  of a convex lens and mention the characteristics of

image formed.

- 52 Draw a ray diagram to show the formation of image of an object placed between  $F_1$  and  $O$  of a convex lens and mention the characteristics of image formed.
- 53 Draw a ray diagram to show the formation of image of an object placed between infinity and optical centre  $O$  of a concave lens and mention the characteristics of image formed.
- 54 Draw a ray diagram to show the formation of image of an object placed at infinity from a concave lens and mention the characteristics of image formed.
- 55 How would a pencil look like if you saw it through
  - a) A concave lens and
  - b) A convex lens (Assume that the pencil is close to the lens).Is the image real or virtual ?

Three marks questions

- 56 A diverging lens has focal length of 20cm. At what distance from the lens a 5cm tall object be placed so that it forms an image at 15cm from the lens. Also calculate the size of the image.
- 57 The image of a Candle flame placed at 2 distance of 45cm from a spherical lens is formed on a screen placed at a distance of 9cm from the lens. Identify the type of lens and calculate its focal length. If the height of the flame is 2cm, find the height to its image.

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## CHAPTER 12. ELECTRICITY

### 1 mark questions:

1. What does a switch do?
2. Define an electric circuit?
3. How do we express electric current? Write its SI unit.
4. Define one ampere.
5. How many electrons constitute one coulomb of charge?
6. What is the charge of 1 electron?
7. What are electric charges? Write its SI unit.
8. Name the instrument used to measure electric current in a circuit?
9. How ammeter is connected in the circuit to measure electric current?
10. Define electric potential difference.
11. Name the instrument used to measure electric potential difference.
12. Define one volt.
13. How voltmeter is connected in the circuit to measure potential difference?
14. Name the device that helps to maintain a potential difference across a conductor.
15. Define ohms law.
16. What is the shape of the graph obtained by plotting potential difference applied across a conductor against the current flowing through it?
17. What is an electrical resistance of a conductor ?
18. Define 1 ohm resistance or “the resistance of a conductor is  $1\Omega$ ” what is meant by this statement ?
19. What is variable resistance ?
20. Name the device that used to change the resistance in the circuit ?
21. What is a resistor ?
22. How does the resistance of wire vary with its cross section ?
23. How does the resistance of wire vary with its length ?
24. Write an expression for the resistivity of a substance.
25. What is the total effective resistance in the circuit if 3 resistances are connected in series ?
26. What is the total effective resistance in the circuit if 3 resistances are connected in parallel ?
27. What is heating effect of electric current ?
28. Write a mathematical expression for joules law of heating.
29. Name the material used for making the filament of a bulb ?
30. Why bulbs are usually filled with chemically inactive nitrogen and argon gas?
31. What is the melting point of tungsten filament ?
32. Define electric power.
33. What is the commercial unit of electric energy ?
34.  $1\text{kWh} = \underline{\hspace{2cm}} \text{ J}$

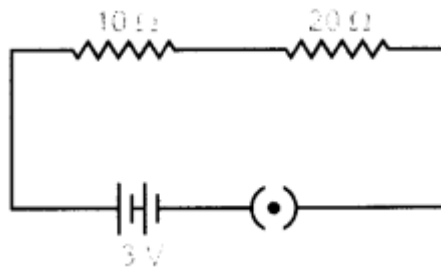
### 2mark questions:

35. Why are coils of electric toaster and electric irons made of an alloy rather than a pure metal?

36. Draw a schematic diagram of simple electric circuit.
37. Draw V-I graph for nichrome wire.
38. Draw electric circuit diagram for studying Ohms law.
39. On what factors do the resistance of a conductor depends?
40. Draw a schematic diagram of a circuit consisting of a battery of three cells of 2V each , resistors of resistance  $R_1\Omega, R_2\Omega, R_3\Omega$  and plug key are connected in series.
41. Draw a schematic diagram of a circuit consisting of a battery of three cells of 2V each , resistors of resistance  $R_1\Omega, R_2\Omega, R_3\Omega$  and plug key are connected in parallel.
42. Why don't we connect electrical appliances in series ?
43. State Joules law of heating.
44. Name some electric devices which are based on Joules heating.
45. A current of 10 A flows through a conductor for two minutes. Calculate the amount of charge passed through any area of cross section of the conductor.
46. Calculate the potential difference between the two terminals of a battery if 100 J of work is required to transfer 20C of charge from one terminal of the battery to the other.
47. The resistance of a wire of 0.01cm radius is  $10 \Omega$ . If the resistivity of the material of the wire is  $50 \times 10^{-8} \Omega m$ , find the length of the wire.
48. 100J heat is produced each second in a  $40\Omega$  resistance. Find the potential difference across the resistor.
49. For an electric iron which consumes 1kW electric power when operated at 220V. Calculate the amount of electricity flowing through it and also suggest the power of fuse must be used in a circuit.
50. An electric bulb is connected to a 220V generator. The current is 0.50A. What is the power of the bulb?

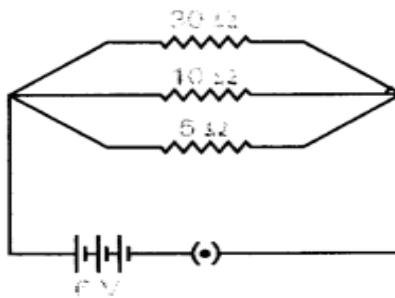
**3 mark questions:**

51. State three salient features when resistors are connected in series.
52. State three silent features when resistors are connected in parallel.
53. Write about fuse
54. An electric iron consumes energy at the rate of 840W when heating is at the maximum rate and 360W when the heating is at the minimum. The voltage is 220V. What are the current and the resistance in each case?
55. A torch bulb is rated 2.5 V and 750 mA. Calculate
  - (i) its power,
  - (ii) its resistance and
  - (iii) the energy consumed, if this bulb is lighted for four hours.
- 56 Study the following electric circuit and find
  - (i) the current flowing in the circuit and
  - (ii) the potential difference across  $10 \Omega$  resistor.



57 For the electric circuit given below calculate:

- (i) Current in each resistor
- (ii) Total current drawn from the battery and
- (iii) Equivalent resistance of the Circuit.



58 Write the SI unit of charge, electric current, time, potential difference, resistance, resistivity, heat, electric power.

59 Draw symbols for the following components used in electric circuit.

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## CHAPTER 13. Magnetic Effect of Electric Current

### I One Mark Questions

1. What is magnetic field?
2. Why does a compass needle get deflected when brought near a bar magnet?
3. What are magnetic lines of force?
4. What is solenoid?
5. What is electric motor?
6. What is commutator?
7. What is Electromagnetic Induction?
8. What is an electric generator?
9. What is short circuit?
10. State Maxwell Right Hand Thumb Rule
11. State Fleming's left hand (motor) rule
12. State Fleming's right hand (generator) rule
13. What is the principle of an electric generator?
14. What is the principle of an electric motor?
15. Write the uses of Maxwell's Right Hand Thumb Rule
16. Write the uses of Fleming's left hand rule
17. Write the uses of Fleming's right-hand rule
18. What is direct current?
19. What is alternate current?
20. What is an armature?
21. Why does a compass needle get deflected when brought near a bar magnet?
22. Why there is no current produced when a bar magnet is kept stationary inside a coil.?
23. Why any two magnetic lines of force of a magnet do not intersect with each other?
24. Why the magnetic field is same at all points inside the solenoid carrying current.?
25. Why split rings are used instead of slip rings in a D C generator?
26. What is the role of the split ring in an electric motor?
27. What is an electromagnet?
28. List the uses of an electromagnet
29. What is the potential difference in a domestic electricity supplied in our country?
30. What factors does the magnetic field produced by a straight current carrying conductor depend?
31. Why Magnetic field lines are closed curves?
32. What are the uses of magnetism in the Medical field?

### II Two Mark Questions

33. Differentiate electric motor from dynamo
34. Why earthing wire is necessary in electric appliances?
35. What precautions should be taken to avoid the overloading of domestic electric circuits?
36. What is the function of fuse in an electric circuit?

37. How overload occurs in an electric circuit?  
38. Name the safety measures commonly taken in electric circuits and appliances.  
39. Explain different ways of inducing current in a coil

### III Three Mark Questions

40. What are the functions of three wires that are used in domestic circuits?  
41. How do you obtain induced current by using cardboard, coil galvanometer and bar magnet  
42. A coil of insulated copper wire is connected to a galvanometer, what will happen if a bar magnet is  
a) put into the coil  
b) withdrawn from inside the coil  
c) held stationary inside the coil  
43. Two circular coils A and B are placed close to each other. If the current in the coil A is changed, will some current be induced in the coil B? Give reasons.  
44. State the rule to determine the direction of a  
a) magnetic field produced around a straight conductor carrying current  
b) force experienced by a current carrying straight conductor placed in a magnetic field which is perpendicular to it.  
c) current induced in a coil due to its rotation in a magnetic field.  
45. How does a solenoid behave like a magnet? Can you determine the North and South poles of a current carrying solenoid with the help of a bar magnet? Explain.  
46. Differentiate an electric heater wire with a fuse wire.  
47. Draw a neat, labelled diagram of an electric generator.  
48. Draw a neat, labelled diagram of electric motor.

### IV Four Mark Questions

49. Draw a diagram of magnetic field lines formed when current carrying conductor is inserted through a cardboard  
a) Does the magnetic field change when current carrying conductor is moved away?  
b) Does the magnetic field change when current is increased in a current carrying conductor?  
50. A magnetic compass shows a deflection when placed near a current carrying wire, How does the following conditions influence the deflection?  
a) If the current in the wire is increased.  
b) If the current carrying wire is moved away from the magnetic compass.

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## CHAPTER 14. SOURCES OF ENERGY

### One mark questions

1. What is Solar Panel?
2. What is the Principle of solar water heater?
3. What is the Principle of Solar cell?
4. There are two Solar cookers one is closed with glass and the other is open. Among the two cookers which is more useful? why?
5. What is the voltage and Electricity Produced by a typical Solar cell when exposed to sunlight?
6. What is meant by tidal Energy?
7. What is wave Energy?
8. What are hot springs?
9. Which particle initiates the Nuclear fission process?
10. What is meant by nuclear fission?

### Two marks question

11. Write the uses of Solar Cells.
12. What is Geothermal energy? Explain.
13. How is Electricity generated from Geothermal Energy?
14. Solar cells are Expensive? Give reasons.
15. How is Electricity generated from tidal Energy?
16. List the demerits of tidal energy.
17. How is Electricity generated from wave Energy?
18. How is Electricity generated from ocean thermal Energy?
19. What are the disadvantages of Nuclear Energy?
20. What are the differences between conventional sources of Energy and non-conventional sources of Energy?

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## CHAPTER 15. Our Environment

### Multiple choice questions:

- The correct statement with respect to bio-degradable substances among the following is, these substances
  - Remain inert in the environment for a long period.
  - Harm various organisms in the eco system
  - Increase the density of harmful chemicals in different tropic levels.
  - Undergo recycling naturally in the environment.
- Two steps of formation of ozone layer
  - $O_2 + O \rightarrow O_3$        $O_2 + O \rightarrow O_3$
  - $O_2 \rightarrow O + O$        $O_2 + O \rightarrow O_3$
  - $O_2 + O_2 \rightarrow O_3$        $O_2 + O \rightarrow O_3$
  - $O + O \rightarrow O_2$        $O_2 + O \rightarrow O_3$
- Ozone layer is formed by the oxygen at the higher levels of the atmosphere by the action of
  - X rays
  - Ultraviolet rays
  - Infrared radiation
  - Radio waves
- The chemical present in CFC which is responsible for declination of ozone layer is
  - Chlorine
  - Flourine
  - Carbon
  - Oxygen
- Bio-degradable substance among the following is
  - DDT
  - Agriculture waste
  - Plastic
  - Dry leaf
- Eco friendly fuel is
  - Petrol
  - Kerosene
  - Biogas
  - LPG
- Reason for acid rain is
  - Deforestation
  - Sulphur and Nitrogen oxide
  - Fossil fuel
  - Nuclear waste
- Best method to manage non-biodegradable waste is
  - burning
  - dumping
  - burying
  - recycling
- The substance responsible for the depletion of ozone layer
  - CFC
  - CCF
  - HDFC
  - KFC
- Use of ozone for living organisms is
  - supplying oxygen
  - pollution control
  - protection from UV rays
  - supply of carbon dioxide

### One mark questions:

- Give an example for herbivorous food chain.
- What is food chain?
- What is food web?
- What is biological magnification?
- Give two examples for primary consumers.
- What will happen if we kill all the organisms in one tropic level?
- The depletion of Ozone layer is a cause of concern. why?
- What is the formula of ozone?
- What is the function of Ozone at the higher level of atmosphere?

20. CFC is a harmful chemical why?
21. Which compounds are responsible for the depletion of Ozone layer?
22. Why it is necessary to conserve our environment?
23. What are non- biodegradable substances?
24. What are biodegradable wastes?

**2 marks questions:**

25. Bacteria and fungi are called decomposers. Why?
26. Give an example to illustrate the indiscriminate use of pesticides may result in the degradation of the environment.
27. What steps should be taken to limit the damage to the ozone layer?
28. Give an example to illustrate that use of pesticides may result in degradation of environment.
29. We often observe domestic wastes decomposing in the lanes of residential colonies. Suggest ways to make people realise that the improper disposal of waste is harmful to the environment.
30. Government of India is imposing a ban on the use of Polythene bags for shopping. List four advantages of using cloth or jute bags over Polythene bags.
31. What is environmental pollution?
32. How is "the increase in demand for energy" affecting environment adversely?
33. Mention any two problems caused by non-biodegradable wastes that we generate in our daily life.
34. What are non- biodegradable wastes? Give 2 examples.
35. What are biodegradable wastes? Give 2 examples.
36. What are the problems caused by non- biodegradable wastes we generate?

**3 marks questions**

37. Damage to the Ozone Layer is a cause for concern, justify the statement. Suggest any two steps to Limit this damage.
38. What is biodiversity? what will happen if biodiversity of an area is not conserved? mention one effect of it.
39. List two advantages of conserving forest and wildlife.
40. Why are Bacteria and fungi called decomposers? List two advantages of decomposers to the environment.
41. Why is improper disposal of waste a curse to the environment?
42. Name the waste which is generated in your house daily. What measures would you take for their disposal?
43. What are the by-products of fertilizer Industries? How are they affecting the environment?

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