ENFANT INDIA ENGLISH SCHOOL

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WORK SHEET - SCIENCE

CHAPTER 1. SCHOOL OF ELEMENTS

Q1 Fill in the blanks:

(1) _____ used triads to classify the elements.
(2) _____ Periodic table listed 63 elements.
(3) In the triads, the mass of the middle element was equal or nearly equal to the _____ of the atomic masses of the other two elements.
(4) New lands periodic table did not list _____ gases because they were undiscovered them.

Q2 Match the columns:

A	B
(1)Eka-boron	(a) Germanium
(2)Eka-silicon	(b) Horizontal rows
(3)Atomic number	(c) Vertical Columns
(4)Periods	(d) Scandium
(5)Groups	(e) A
	(f) Z

Q3 Find the odd man out:

(1) Ba, Li, Na, k. (2) F, Cl, Br, Al.
(3) Mg, Ca, Cu, Sr. (4) B, N, C, O.
(5) He, Be, Ne, Xe. (6) As, Ge, P, Si.

Q4 Name the following:

(1) Three undiscovered elements whose properties were accurately predicated by Mendeleev.
(2) Three non-metals then can from compounds with alkali metals, similar to those formed by them with hydrogen.

Q5 Give two examples of each:

(1) Elements of alkali metals. (2) Elements of P-block.
(3) Elements of d-Block. (4) Elements of F-block.
(5) Normal elements. (6) Isotopes of oxygen.
(7) Transition elements.

Q6 State whether the following statements are true or false:

(1) Matter can be classified as elements, compounds and mixtures.
(2) Newlands arranged the elements in the increasing order of the atomic numbers.
(3) Only the elements from s-block are called normal elements.
(4) The elements in the zero groups have atoms with incomplete outermost shells.
(5) All the isotopes of the same elements have different atomic masses but the same atomic numbers.
(6) The valency of an element depends on the number of shells of the atom.
(7) All the elements of a group have same number of valence electrons.
(8) In Mendeleeve's periodic table, a zig zag line separates metals from non metals.
(9) Elements in Mendeleev's periodic table are classified on the basis of their electronic configuration.
(10) In the morden periodic table, isotopes of the same table occupy different position.
(11) The elements in the d-block are called inner transition elements.
(12) Lanthanides and actinides are placed at the bottom of the morden periodic table.
(13) Mendeleev's original periodic table had 7 main groups.
(14) Mendeleev's believed that atomic mass of elements was the most fundamental property in classifying elements.
(15) Each of the seven groups in Mendeleev's periodic table was divided into A and B sub-groups.
(16) The classification of elements into different into different blocks depend on the atomic size of their atoms.
(17) Properties of elements in a particular period show gradation from left to right.

Q7 Write two important characteristics of each:

(1) The first period in the modern periodic table.
(2) Elements of S-block.
(3) Elements of group 18.
(4) Second period of the modern periodic table.
(5) Alkaline earth metals.
(6) Elements of group 14.
(7) Sixth period of the modern periodic.
(8) Halogens.
(9) Alkali metals.
(10) Fifth period of the modern periodic table.
(11) Seven period of the modern periodic table.

Q8 Give scientific reasons:

(1) Some elements are classified as metalloids.
(2) In a group, the character increases and non-metallic characteristic decreases from top to bottom.
(3) Elements with atomic numbers 58 to 71 are placed along with lanthanium (Z =57) in the same group 3 in period 6.
(4) Elements with atomic numbers 90 to 103 are placed along with actinium (Z=89) in the same group 3 in period 7.

Q9 Answer each of the following in one sentence:

(1) Name the system of classification of elements used by Newlands.
(2) State Newlands' law.
(3) State Mendeleev's periodeic law.

(4) State the important discovery made by Henry Moseley.
(5) What is Mendeleev's periodic table?
(6) How many elements did Mendeleev's first periodic table contain?
(7) How many elements were known to Newlands?
(8) Name the most commonly used version of the modern periodic table.
(9) What does the atomic number represent?
(10) Why were the noble gases not included in Newlands' periodic table?
(11) What are the metalloids also known as?
(12) State the modern periodic law.

Q10 Distinguish between: (Give at least two points of distinction in each case.)

(1) Mendeleev's periodic Table and Modern Periodic Table.
(2) Group and Periodic in the modern periodic table.
(3) Elements of d-block and Elements of f-block.
(4) Metals and non-metals on the basis of their valence electrons and ion forming nature.
(5) Lanthanides and Actinides.

Q11 Answer the following:

(1) State the merits of Mendeleev's periodic table.

CHAPTER 2. THE MAGIC OF CHEMICAL REACTION

Q1. Fill in the blanks:

1. When a chemical changes occurs, a chemical _____ takes place.
2. A chemical reaction is represented by a _____.
3. An electric bulb has a filament made of element called _____.
4. During a chemical change, the _____ are permanently converted into _____ products.
5. Silver bromide turns green when exposed to _____.

Q2. Match the columns:

A	B
1. Copper oxide	a. Brown
2. Copper Sulphate	b. White
3. Cuperic Iodide	c. Red
4. Silver bromide	d. Black
5. Silver Chloride	e. Pale Yellow
	f. Blue

Q3. State whether the following statement are true or false. If false, write the correct statement:

1. Respiration is a physical change.
2. Iron sulphate is formed by mixing iron and sulphur.

3. Sublimation of camphor is physical change.
4. When potassium nitrate is dissolved in water, the solution becomes warm.
5. Antioxidants are used to prevent oxidation of food containing fats and oils.
6. Copper articles exposed to moist and polluted air get corroded.
7. Edible oils are compounds of alcohols and organic acids.
8. Glucose combines with water in our body and provides energy.
9. The chemical reaction between silver nitrate and sodium chloride solution is a double displacement reaction.
10. Hydrogen has a foul odour like that of rotten eggs.
11. The reaction between iron sulphide and dilute sulphuric acid is exothermic.

Q4 Answer the following question in one sentence:

1. What happens to the temperature of water in a beaker when some sodium hydroxide is added?
2. What is meant by 'thermal decomposition'?
3. What happen when a thin strip of aluminium is burn?
4. Nam the changes occurring in a substance that indicates a chemical reaction has taken place.
5. Name the catalyst used in the conversion of edible oils into solids fats.
6. Name two compounds of silver used in black and white photography.
7. What is meant by nascent oxygen?
8. What changes in the colour are observed when hydrogen gas is passed over copper oxide?
9. What type of reaction takes place when hydrogen is passed through a edible vegetable oil which is converted into fats in the presence of a catalyst?
10. What is a precipitate?

Q5 Define/explain the following terms:

1. Combination reaction
2. Corrosion
3. Decomposition reaction
4. Precipitation reaction
5. Rust
6. Galvanizing
7. Electroplating

Q6 Distinguish between :(Write at least two pair of distinction in each case.)

1. Oxidation Reaction and Reduction Reaction.
2. Physical Changes and Chemical Changes.
3. Displacement Reactions and Double displacement Reactions.

Q7 Give scientific reason:

1. A chemical question needs to be balanced.
2. When we use a soap to wash yellow stains of turmeric, the stains turn red.

Q8 Rewrite each of the following word equation as a balanced equation using
Chemical formula and other symbols:

1. Copper + Oxygen → Copper oxide
2. Sulphur dioxide + Hydrogen sulphide → Sulphur + Water
3. Ozone →Oxigen + Nascent Oxygen

4. Glucose + Oxigen → Carbon dioxide + Water + Energy
5. Carbon + Hydrogen → Methane
6. Iron + Sulphur → Iron Sulphide (s)

B. Complete the following reaction by stating the condition under which the reaction takes place:

1. Edible oil (l) + Hydrogen (g) → Fats (s)
2. $C_{12}H_{22}O_{11}(s) + H_2O \rightarrow C_6H_{12}O_6 + C_6H_{12}O_6$

Q9 Complete each of the following equation. Balance them & classify as combination / decomposition/ thermal decomposition/ displacement/ double displacement type of reaction:

1. $CuSO_4(aq) + Zn(s) \rightarrow$ _____ +_____
2. $CaCO_3(s) \rightarrow$ _____ + _____
3. $Al(s) + O_2(g) \rightarrow$ _____
4. $BaS(s) +$ _____ $\rightarrow BaSO_4 \downarrow +$ _____
5. $AgCl \rightarrow$ _____ + _____
6. $Zn(s) + HCl \rightarrow$ _____ + _____

Q10 Balance each of the following equation:

1. $2C_2H_5OH(l) + Na(s) \rightarrow C_2H_5ONa + H_2(g)$
2. $3CaO.Al_2O_3(s) + H_2O(s) \rightarrow 3CaO.Al_2O_3.6H_2O$ + heat
3. $(CaSO_4)_2.H_2O + H_2O \rightarrow 2(CaSO_4.2H_2O)$

Q9 Explain with balanced equation. What happens in each of the following?

1. Barium sulphate is heated with coke.
2. Solution of silver nitrate is added to a solution of common salt.
3. A shiny strip of iron is dipped in the solution of copper sulphate.
4. Hydrogen gas is passed over heated particles of copper oxide.
5. Calcium sulphide is treated with dilute hydrochloric acid.
6. Silver bromide is exposed to sunlight.
7. Copper chloride is treated with a solution of potassium iodide.
8. Can sugar is heated.
9. Pellets of sodium hydroxide are added to water.
10. Carbon dioxide reacts with rain water.
11. Potassium nitrate added to water.
12. Dilute sulphuric acid is poured over crushed iron sulphide.
13. Ethylene is subjected to a high temperature and high pressure.

Q10 Why do different chemical reactions take place at different rates?

CHAPTER 3 .THE ACID BASE CHEMISTRY

Q1. Fill in the blanks.

1. Base that dissolve in water are called _____.

Q2 Match the columns:

A	B
(1) Turmeric	(a) Tooth Enamel
(2) Calcium phosphate	(b) Bitter
(3) Sodium bicarbonate	(c) Anaesthetic
(4) Base	(d) Detergent powder
(5) Bleaching powder	(e) Indicator
(6) Chloroform	(f) Alkaline
	(g) Oxidizing agent

Q3.Find the odd man out:

1. Sugar cane, Vinegar, Tamarind, Kokum.
2. Eosin, Phenolphthalein, Litmus, Methyl orange.
3. H SO , HCL, NH OH , HNO
4. Sodium, potassium, calcium, gypsum.

Q4 State weather the following statements are true or false:

1. Chlorine is a strong disinfectant
2. Alkalies have H + ions.
3. When a drop of universal indicator is added to distilled water, it turns purple.
4. Antacids are acidic substances.
5. Common salt is an ionic compound.
6. The reaction between a base and an oxide of a nonmetal is neutralization.
7. Juice of rose petals or hibiscus can be used as indicators.
8. Baking soda is a brown amorphous powder.
9. In the symbol Ph, P stands for “power of”.
10. Alkalies do not react with metals.
11. A neutral substance has a pH of o (zero).
12. Rain water is neutral.
13. A solution of an alkali cannot conduct electricity.
14. Chloride lime has a strong odour of lemon juice.
15. Phenolphtalein remains colourless in an acid.

Q5 Write the molecular formula of each of the following:

(1) Baking soda (2) Chalk
(2) Common salt (4) Chloride of lime
(5) Slaked lime (6) Vinegar
. (7) Washing soda (8) Ammonium hydroxide
(9) Aluminium carbonate (10) Anhydrous copper sulphate

Q6. Name the following.

1. The acid produced in our stomach.
2. A gas that can turn lime water to milky colour.
3. Gas set free by bleaching powder when water is added to it.
4. A basic salt added to hard water to make it soft and potable.
5. A root vegetable, purple –coloured juice of which can be used as an indicator.

Q7. Answer each of the following in one sentence:

1. What does acidus mean?
2. What is universal indicator consist of?
3. What ions do acids contain?
4. What is a strong acid?
5. State the range of pH in a human body.
6. What is the chemical formula of red oxide used as a paint?
7. Name two salts that can be obtained using common salt as one of the raw materials.
8. What is fused salt?
9. Name two classes of compounds that can corrode metals.
10. What is ionization?
11. What is available chlorine?
12. State two uses of chloroform.
13. Give any two uses of sodium carbonate.
14. Name the substances that produce hardness in water.
15. What is saponification?
16. How is soap produced?

Q8 Give scientific reasons:

1. Lime water and butter having butyric acid can be used to treat acidity.
2. During electrolysis of solution, electric bulb glows when the electrodes are dipped in a solution of dilute HCl but it does not glow when they are dipped in the solution of glucose (or methyl alcohol).
3. To dilute sulphuric acid, we should not add water to the acid but add acid to water.
4. A bite a red ant or sting of a honey bee cause itching, irritation pain and swelling.
5. When few grains of copper oxide are dropped in a beaker containing water they do not dissolve but maintain their black colour. However, when concentrated hydrochloric acid is added to the beaker, a blue3coloured solution is obtained.
6. Bleaching powder must be stored in air-tight container.
7. Bleaching powder is often added to water in swimming pools or sprinkled on uncleared garbage.

Q9 Complete the following equation and balance them when necessary.

1. $Zn(s) + HCl(aq) \rightarrow$ _____ + _____
2. $CuO(s) + HCl \rightarrow$ _____ + _____
3. _____ + $NaOH(aq) \rightarrow NaCl(aq)$ + _____
4. $Mg(s)$ + _____ $\rightarrow MgSO4(aq) + H2(g)$
5. $Na2O(aq) + H2SO4(aq) \rightarrow$ _____ + _____
6. $Na2CO3(s) + HCl \rightarrow$ _____ + $H2O$ + _____

CHAPTER 4. THE ELECTRIC SPARK

Q1. Fill in the blanks.

1] During a lightning spark, _____.

[a] the earth is at high potential

[b] the could is at a low potential.

[c] the could is a zero potential
[d] the earth is at zero potential

[2] Out of the following materials _____has the highest resistivity.
[a] copper [b] iron
[c] wood [d] silver

[3] The resistance of a conductor carrying current _____
[a] does not depend on the area of cross section
[b] directly proportional to the area of cross section
[c] inversely proportional to the area of cross section
[d] inversely proportional to the square of the cross section

[4] When 3 resistance of 3Ω each are connected in parallel the effective resistance in the Circuit is _____
[a] 1Ω [b] 9Ω [c] ⅓Ω [d] 3Ω

[5] The alloy used in an electric fuse is _____
[a] lead and tin [b] copper and lead
[c] copper and tin [d] nickel and tin

[6] A current flowing through a conductor is caused by the movement of _____
[a] electrons in atoms
[b] atoms in the conductor
[c] loosly bound electrons
[d] molecules in the conductors

Q2 Find the old man out:

[1] voltmeter, spectrometer, ammeter, galvanometer.
[2] Calories, volts, amperes, ohms.
[3] Copper, silver, nickel, rubber.
[4] Geyser, electric, iron, grinder, microwave.
[5] volta, oesterd, Newton, ohm.

Q3 Define the following:

[1] I WATT.
[2] I coulomb.
[3] Resistance.
[4] Insulator.
[5] Circuit diagram.

Q4 Answer the following question in one sentence:

1] How does the resistance of a material depend upon the conductivity?
2] What change do you observe in the ammeter reading, when the number of cells

In the circuit is increased?

3] How is the heating effect of an electric current utilised in surgery?

Q5 State the following true or false. If false rewrite the correct statement.

1] The e.m.f. of the cell is slightly higher than the P.D.
2] when a current flows through a conductor, the electrons move from the positive terminal to the negative terminal.
3] During power failure, we depend upon an electric moter.
4] To reduce the resistance in a circuit, resistances are connected in parallel.
5] The unit of electric energy is a kilowatt.
6] An ammeter is connected in series.

Q6 Give scientific reasons:

1] P.D of a source of current is less than its e.m.f.?
2] A nichrome coil is used in an electric hearer?
3] rubber soled footwear are worn while handing electrical devices?
4] Metals are good conductors of electricity?
5] The filament in an electric bulb is made of tungsten?
6] A fuse wire is used in electrical appliances?
7] the heating coil in an electric iron is placed between mica sheeta?
8] A conductor carrying an electric current gets heated?

Q7 Write short notes on:

1] Resistance in series. 2] Resistance in parallel.

CHAPTER 5. ALL ABOUT ELECTROMAGNETISM

Q1. Fill in the blanks.

1] In a generator, _____.
[a] electrical energy is transformed into heat energy
[b] mechanical energy is transformed into electrical energy
[c] electrical energy is transformed into chemical energy
[d] mechanical energy is transformed into light energy

2] In a galvanometer, the zero mark is _____.

[a] to the left [b] to the right
[c] in the middle [d] none of these

3] A galvanometer is used _____.
[a] to measure the potential difference
[b] measure the resistance of a conductor

[c] to regulate the intensity of a current
[d] to detect the presence of an electric current

4] The direction of the induced current due to a current-carrying conductor is given by _____.
[a] Fleming's left hand rule
[b] Fleming's right hand rule
[c] right hand thumb rule
[d] none of these

5] Our of the following appliances _____does not work on an electric motor.
[a] electric fan [b] hair dryers
[c] television [d] refrigerator

6] An electric crane is used _____.
[a] to drive an electric train
[b] to generate electricity
[c] to cut an iron bar into pieces
[d] to load and transport scrap and heavy iron material

Q2. Find the odd man out.

1] Soleniod, electric bell, bulb, telephone earpiece.
2] Carbon steel, alnico, soft iron, chromium steel.
3] Geyser, microphone, loudspeaker, electric clock .
4] Dynamo, electric crane, electric iron, electric water pump.
5] Electric iron, electric bulb, electric bell, geyser.
6] Fire, overloading, short circuit, fuse.

Q3. Match the columns.

Column 1	Column 11
[1] Electric crane	[a] Mechanical energy -> A.C. current
[2] A. C. motor	[b] D.C. current -> Mechanical energy
[3] A.C. generator	[c] A.C. current -> Mechanical energy
[4] D.C. generator	[d] Electric energy -> Magnetic energy
	[e] Mechanical energy -> D.C. current

Q4. Define the following.

1] Electromagnet. 2] Alternating current. 3] A.C. generator.

4] D.C. generator 5] Earthing. 6] Overloading

7] Short circuit

Q5. Answer the following briefly.

1] What is the use of an electric fuse?

2] What happens when there is a short circuit?

3] What is 'MRI'? Where is it used?

4] How are induced current caused?

Q6. State whether the following statements are True or False. If false, write the correct statement.

1] Permanent electromagnets are usually made of soft iron.

2] The magnetic field in the hollow space in a solenoid is very weak.

3] In Fleming's right hand rule, the thumb shows the direction of the induced current.

4] The frequency of an alternating current is zero.

5] In a domestic circuit, the main fuse is placed in the path of the live wire.

6] In a domestic electric circuit, the domestic appliances are connected in parallel.

Q7 Give scientific reasons:

1] A magnetic field produced by a coil of wire is much stronger than that produced by the same wire when it is stretched into a straight conductor.
2] We must never touch, with our bare hands, a person who is in contact with a live wire.
3] Most electrical appliances require earthing.
4] Household wiring must be inspected periodically, and replaced, if found to be defective.
5] In an electric bell, soft iron is used in the core of the electromagnet.

Q8 Draw neat and labelled diagrams:

1] Magnetic field due to a conductor carrying a current
2] Magnetic lines of force through a solenoid
3] A.C. Generator
4] D.C. Generator

Q9 Answer the following:

1] With a neat diagram, describe a simple experiment to prepare an electromagnet in the laboratory.
2] What is a solenoid? How will you use a solenoid?

Q10 Write short notes on - Safety measures in using electricity

Q11 What is electromagnetic induction? Describe an experiment to study electromagnetic induction.

CHAPTER 6. WONDERS OF LIGHT PART - I

Q1. Fill in the blanks.

1] One side of a plane mirror is coated with _____.
2] In a _____ mirror, the outer side of the spherical surface is polished.
3] A _____ mirror is also called a converging mirror.
4] An aged person generally uses a _____ lens.
5] The image formed by a plane mirror is a _____ image.
6] In a spherical mirror, the radius of curvature is _____ the focal length.
7] The image of a distant object, like a tree, is obtained nearly at the _____ of the convex lens.
8] The power of a lens having a focal length of _____ is one dioptre.
9] The distance of distinct vision for a normal eye is _____.
10] Presbyopia is also called old age _____.

Q2 Choose the correct alternative and rewrite the following statements:

1] A concave mirror forms an 9image of the same size when _____.

[a] the object is placed at the focus.
[b] the object is placed within the focal length.
[c] the object is placed beyond the focus.
[d] the object is placed at the centre of curvature.

2] Light is a form of _____ energy.
[a] electrostatic [b] electromagnetic
[c] electrochemical [d] photoelectric

3] The nature, position and size of the image formed by a concave mirror depends on _____.
[a] size of the mirror.
[b] size of the object.
[c] position of the observer.
[d] distance of the object from the mirror.

4] According to the sign convention, the object is always placed _____.
[a] to the right of the mirror.
[b] at the principal focus.
[c] to the left of the mirror.
[d] at the centre of curvature.

Q3 Match the columns:

A

	COLUMN I		COLUMN II
1]	A thin membrane	[a]	Iris
2]	Light-sensitive screen	[b]	Cornea
3]	Transparent crystalline body	[c]	Pupil
4]	Opening of variable diameter	[d]	Eyeball
		[e]	Retina
		[f]	Eye Lens

B

	COLUMN I		COLUMN II
1]	Searchlight	[a]	Plane mirror
2]	Compound microscope	[b]	Simple microscope
3]	Correction of long sight	[c]	Variety of mirrors
4]	Jewellers	[d]	Concave lens
5]	Home	[e]	Convex lens
6]	Laughing gallery	[f]	Pair of convex lenses
		[g]	Plane mirror
		[h]	Concave mirror

Q4 Define the following terms.

1] Myopia.
2] Hypermetropia.
3] Magnification. (lens)
4] Power of a lens.
5] Spherical mirror.
6] Focal length. (lens)
7] Principal axis. (mirror)
8] Centres of curvature. (lens)
9] Lens.
10] Optical centre.

Q5 Answer the following question.

1] What is the condition required for us to see an object clearly?
2] Explain the terms convergence and divergence of light?
3] State the characteristics of the image formed when an object is placed in front of a concave lens.
4] What are real images? Which type of mirror forms real images?

Q6 Distinguish between.

1] Hypermetropia and Presbyopia.
2] Real image and Virtual image.
3] Convex lens and Concave lens.

Q7 Give scientific reasons.

1] We cannot see our face in a mirror in a dark room with closed doors and window.
2] The image formed by a plane mirror is virtual.
3] The magnification for real image is always negative.
4] A dentist uses a concave mirror to observe a decayed tooth.

Q8 Answer the following.

1] Explain, with a diagram, the sign convention for a concave mirror.
2] Draw a diagram of a concave mirror and mark the following. (a) Pole, (b) Focus, (c) Centre of curvature, (d) Focal length, (e) Radius of curvature.
3] Explain the function of the following parts in the human eye. (a) cornea, (b) eye lens, (c) retina.
4] Write a note on applications of convex lens.
5] Describe a simple experiment to find the approximate focal length of a convex lens. Draw a neat diagram.

CHAPTER 7. WONDERS OF LIGHT PART - II

Q1. Fill in the blanks.

1] Light travels along a _____ path in a transparent medium.
2] During refraction the incident ray and the refracted ray are on the opposite sides of the _____.
3] At the time of sunrise, we see the sun a little _____ the sun reaches the horizon.
4] During refraction, the incident ray, the refracted ray and the normal lie in the same _____.
5] The refractive index of _____ is greater than that of most other substances.
6] In the formation of a rainbow, the droplets of water act as tiny _____.
7] In glass slab experiments, the emergent ray is shifted slightly to the _____ of the incident ray.
8] When a ray of light travels normal to the interface between two media, the ray travels _____.

Q2 Match the columns:

A	**COLUMN I**		**COLUMN II**
1]	Rainbow	[a]	Reflection
2]	Sunrise	[b]	Spectrum
3]	Apparent position of star	[c]	Advanced
4]	Sunset	[d]	Refraction
		[e]	Delayed
		[f]	Atmospheric refraction

B	COLUMN I	COLUMN II
1]	Blue	[a] Longest wavelength
2]	Red	[b] Sunlight
3]	White	[c] Colour of stars
4]	Orange	[d] Maximum scattering
5]	Violet	[e] Shortest wavelength
		[f] Midday sun
		[g] Sunrise

Q3 Choose the correct alternative and rewrite the following:

1] A mirage is generally seen on _____.
   [a] early in the morning
   [b] at the time of sunset
   [c] on a hot afternoon
   [d] on a cold night

2] The term, absolute refractive index, is used when the second medium is _____.
   [a] air [b] glass [c] water [d] vaccum

3] The formation of a rainbow involves the phenomenon of _____.
   [a] dispersion [b] reflection [c] refraction [d] all the three

4] In the spectrum of a rainbow, the red colour is at the outer end and violet is at the inner end because _____.
   [a] the wavelength of violet is longer than that of r ed.
   [b] the wavelength of red is longer than that of violet.
   [c] violet has the shortest wavelength and red has the longest wavelength
   [d] violet has the longest wavelength and red has the shortest wavelength.

5] The apparent position of the sun is _____.
   [a] at the horizon
   [b] above the horizon
   [c] below the horizon
   [d] none of these

6] The difference between the actual daytime and the apparent daytime is _____.
   [a] 2 minutes [b] 5 minutes
   [c] 4 minutes [d] 6 minutes

7] When a pencil is inserted vertically in the water in a glass, the part of the pencil which is under water appears _____.
   [a] shorter and fatter
   [b] Shorter and thinner
   [c] Longer and fatter
   [d] longer and thinner

Q4 State whether the following statements are true or false:

1] The refractive index of diamond is less than that of glass.

2] A ray travels faster in a medium which is optically denser.
3] While traveling from air to glass, the ray of light bends towards the normal.
4] A heavy rubber ball, placed in water, appears bigger in size.
5] Refractive index is the ratio of two similar quantities.
6] Planets are farther from the earth than stars.

Q5 Define the following:

1]	Refraction	2]	Refractive index	3]	Incident ray
4]	Refracted ray	5]	Emergent ray	6]	Angle of incidence
7]	Angle of refraction	8]	Angle of emergence	9]	Dispersion of light
10]	Scattering of light	11]	Spectrum		

Q6 Answer the following:

1] State the laws of refraction.
2] What do you observe when a ray of light is incident normally to the interface between two media? Give an example.
3] Sunlight is allowed to pass through one prism and then through another prism placed parallel to the first prism in an upside down position. What do you observe? Explain your observation.
4] How does scattering of light take place in the atmosphere?
5] What is the relationship between refractive index and the velocity of light?

Q7 Give scientific reasons:

1] The bottom of a pond appears raised.

OR

A swimming pool appears shallower than it is.
2] Red colour is commonly used as danger signals.
3] A pencil [or stick] partially immersed in water appears to be bent at the surface of water.
4] We see the sunrise a little before the actual sunrise.
5] The sky appears blue in colour.
6] A ray of light emerging from a glass slab is slightly displaced to the left.
7] Stars twinkle, but planets do not twinkle.
8] It is difficult to shoot fish under water.
9] A coin which is not visible when seen from the sides of a vessel, suddenly appears when water is poured into the vessel.

Q8 Write short notes on:

1] Mirages
2] Advanced sunrise and delayed sunset

Q9 With a neat diagram, describe an experiment to study the refraction of light is a rectangular glass slab.

CHAPTER 8. UNDERSTANDING METALS AND NON-METALS

Q.1. Use the words given in the bracket and fill in the blanks:
(alkali, brittle, copper, electrolytic, gallium, gold, graphite, hydrogen, iodine, mercury, potassium, salts, silver, tungsten)

1)Metals _____ and _____ are in liquid form at room temperature (300c).
2)Metals _____ and _____ are the best conductors of electricity.
3)Crystal of _____ have luster.
4)_____ an allotrope of carbon is conductor of heat and electricity.
5)_____ metals has the highest melting point.
6)In the reactivity series, _____ is the most reactive metal, whereas _____ is the least reactive one.
7)_____ refining is widely used foe refining impure metals.
8)Sodium and potassium are included in _____ metals.
9)Coal, graphite and sulphur are included in _____ metals.
10)Many metals react with dilute to produce _____ and _____.

Q.2. Match the columns:

Column I	Column II
1) 24 karat gold	a) Hardest substance
2) 22 karat gold	b) Gangue
3) Copper and brass	c) Ore of mercury
4) Diamond	d) Very soft
5) Cinnabar	e) Silvery alloy
6) Stainless steel	f) Greenish coating
	g) Ornament

Q.3. Find the odd man out:

1) Silver, copper, aluminum, lead.
2) NaOH, H_2SO_4, HCl, HNO_3.
3) Aluminium, tin, silver, bronze.
4) Tinning, anodizing, roasting, alloying.

Q.4. State whether the following statement ate True of False. If False write the correct statements.

1) Polyvinyl chloride is a good conductor of electricity.
2) Sodium and potassium metals have low melting points.
3) The earth is an abundant source of materials.
4) All metals are solid at room temperature.
5) Graphite is used to make points of writing pencils.
6) One gram of gold can be drawn into a thin, 2 kilometers long wire.
7) Making of zari depends on malleability of a metals.
8) Oxides of most of the metals are acidic.
9) Pure copper reacts vigorously with dilute hydrochloric acid.
10) Water and ammonia are electrovalent compounds.

Q.5. Name the following:

1) Two alloys that are sonorous.
2) Two metals that, when heated, burn in air to produce intense heat and brilliant light.
3) Two metals which can react very vigorously with cold water.
4) Two commonly used metals that do not occur in a free state in nature.
5) Two metals that can be used to coat iron articles to prevent rusting.
6) Two oxides of nitrogen obtained when a metal reacts with nitric acid.
7) Two metals obtained by electrolysis of their molten chlorides.
8) Two gases formed during electrolysis reduction of aluminium.
9) Two metals often found in a free state in nature.

Q.6. Answer each of the following in one sentence:

1) What happens when steam is passed over granulated zinc.
2) What is a covalent bond?
3) What is Bayer's process used for?
4) What happens when a polished copper article is exposed to moist air?
5) What are the main impurities found in the ore of aluminium?
6) What is meant by 22 karat gold?
7) State the composition of bronze?
8) State the composition of stainless steel.
9) What is an amalgam?
10) Give the anode reaction in the electrolytic reduction of alumina.
11) Complete the following equation and balance them.
    a) $Na + O_2 \rightarrow$ _____
    b) $K_2O + H_2O \rightarrow$ _____
    c) $K + H_2O \rightarrow$ _____ + _____ + Heat
    d) $Al + HCl \rightarrow$ _____ + _____
    e) $Fe + HCl \rightarrow$ _____ + _____
    f) $Al(OH)_3 \xrightarrow[1000\ ^0C]{Heat}$ _____ + _____ .
    g) $ZnCO_3 \xrightarrow{Heat}$ _____ + _____.
    h) $Mg + HCl \rightarrow$ _____ + _____.

Q.7. Explain with a balanced chemical equation, what happen in each of the following:

1) Very fine iron filings are sprinkled on the flame of a burner.
2) A piece of copper is strongly heated in air.
3) A brightly polished aluminium sheet is exposed to air at room temperature for a long period of time.
4) A piece of sodium is dropped in cold water.
5) A lump of calcium is dropped in cold water.
6) Bits of magnesium ribbon are dropped in very hot water.
7) Zinc granules are treated with dilute hydrochloric acid.
8) Piece of magnesium are treated with very dilute nitric acid.
9) Steam is passed over powdered aluminium.
10) Dilute sulphuric is poured over iron filings.
11) Bits of manganese are dropped in very dilute nitric acid.
12) Steam is passed over iron filings.
13) Zinc sulphide is heated in plenty of air.

14) Manganese is heated with powdered aluminium.
15) Sodium oxide is added to cold water.
16) Magnesium is strongly heated in air (or oxygen).
17) A mixture of powdered aluminium and iron oxide is strongly heated.

Q.8. Explain the following terms.

a) Luster b) Malleability. C) Ductility. d) Sonority.
e) Calcinations.

Q.9. Write brief answers to each of the following:

1) What are metalloids? Give any two examples.
2) To classify elements as metals and non – metals, their physical as well as chemical properties are considered.
3) Do all metals react with oxygen? If not, name two metals which do not react with oxygen.
4) Are all metallic oxides soluble in water? If not, name two examples each of insoluble and soluble metallic oxides.
5) What is aqua regain?
6) Name two metals that occur in nature in a free state. Due to what property do they occur so in their native state?
7) How is mercury obtained from cinnabar?

Q.10. Differentiate between each of the following: (Give at least two pairs of distinction in each case.

1) Physical properties of metal and non – metal.
2) Oxides of metals and Oxides of non – metals.
3) Sodium atoms and sodium ions.
4) Chlorine atom and Chlorine ion.

CHAPTER 9 – AMAZING WORLD OF CARBON COMPOUND

Q.1. Fill in the blanks:

1) All Organic compounds are considered as the _____.
2) Ethanol is also called _____ alcohol or _____ .
3) Ethanoic acid is commonly called _____ acid.
4) Molecules of soap are _____ and _____ salts of long chain of carboxylic acids.
5) Wohler, a German chemist, synthesized the organic compound _____ known as _____ cyanides.
6) A single _____ bond is formed by sharing of _____ electrons between two adjacent atoms.
7) Heptanes contains _____ atoms of carbon and _____ atoms of hydrogen in each of its molecule.

Q.2. Match the columns:

(A) Column I	(B) Column II
(1) Propane	(a) C_4H_{10}

(2) Methane	(b) C2H6
(3) Butane	(c) C5H12
(4) Hexane	(d) C3H8
(5) Pentane	(e) C7H14
(6) Ethane	(f) C H4
	(g) C6H14

(B) Column I Column II

(1) Acetone	(a) CH3COOH
(2) Ethyl Alcohol	(b) CH -C=O
(3) Acetic acid	(c)
(4) Acetaldehyde	(d)
	(e)

Q.3. (A) Classify the following compounds as Inorganic and Organic compounds:

(i) alumina,(ii) cotton, (iii) carbon dioxide, (iv) chalk, (v) common salt, (vi) edible oil, (vii) sugar, (viii) ghee, (ix) iron rust, (x) diesel, (xi) potassium hydroxide, (xii) plastics, (xiii) copper sulphate, (xiv) LPG, (xv) vinegar, (xvi) hydrochloric ac id, (xvii) fats, (xviii) nitric acid, (xix) sulphuric acid, (xx) formic acid.

(B) Classify the following as Alkenes, Alkenes and Alkynes

(C) Classify the compounds given in Q.3 (B) above as saturated and unsaturated,

Q.4. State whether the following statements are True or False:

(1) Carbon forms a very large number of organic compounds.
(2) Atomic number of carbon is 4.
(3) Methane is also called marsh gas.
(4) Covalent bonds can be seen in oxygen molecules.
(5) Hydrocarbons containing triple bonds are known as alkynes.
(6) Minerals are classified as organic compounds.
(7) If a carbon atom four gets the configuration of the inert gas xenon,
(8) A molecule of nitrogen is formed when two atoms of nitrogen mutually share two pairs of electrons.
(9) Fuels such as coal and petroleum may contain small quantities of sulphur and nitrogen.
10) Acetaldehyde belongs to the series of carboxylic acid.
11) Carbon atoms have a remarkable property of bonding with each other or other atoms.
12) Saturated and unsaturated hydrocarbons can form only straight chains.
13) Every organic compound has atoms only of hydrogen and carbon.
14) Hydrogen chains can be straight or branched.
15) Ammonium cyanate is an organic compound.

Q.5. Write the general formula and also give the symbol of functional group in each of the following class compound.

	Class of compound	General formula	Symbol of functional group

1)	Alcohols	_____	_____
2)	Aldehyde	_____	_____
3)	Carboxylic acid	_____	_____
4)	Ketones	_____	_____

Q.7. Write only the molecular formula for each of the following.

a) Monechloroacetic acid
b) Trichloroacetic acid
c) Dichloroacetic acid

Q.8. Define/Explain each of t he following.

a) Covalent bond.
b) Catenation
c) Isomerism
d) Functional group
e) Homologous series.
f) Hydrophilic
g) Allotropy
h) An addition reaction.

Q.9. Answer each of the following question in one sentence.

a) What are intermolecular bonds?
b) Name the constitution of diamond and graphite.
c) How are hydrocarbon derivatives obtained?
d) What is the name of the functional group – OH in an organic compound?
e) Give the full form of IUPAC?
f) In the IUPAC system of naming the organic compounds what does the 'root' indicate?
g) In the IUPAC system of naming organic compounds, what does a prefix indicate?
h) Under what condition do we obtain clean blue flame when gas/kerosene is burnt as a fuel in a stove?
i) What are soaps?

Q.10. Give brief answer to each of the following?

a) What are isomers? Give one example of an isomer.
b) How is methyl alcohol obtained from methane?
c) State four properties of ethanol.
d) State the properties of ethanoic acid?
e) Give two uses of diamond?
f) Write two uses of graphite?

Q.11. Differentiate between:

a) Saturated and Unsaturated hydrocarbon?
b) Alkanes, alkenes and alkynes.

Q.12. Give scientific reasons:

a) Carbon forms an extremely large number of compounds.
b) Many hydrocarbons are used as fuels.

c) Using petroleum or coal as fuels is dangerous for our environment.
d) Soaps are as agent to remove dirt from out skin, clothes, etc.
e) Discuss alcohols as a homologous series.

Q.13. Explain with balanced chemical equation when:

a) Methane is burnt in plenty of air (or oxygen).
b) Methane is burnt in limited air.
c) Ethene undergoes addition reaction with bromine.
d) A piece of sodium is dropped in ethyl alcohol.

CHAPTER 10 – LIFE'S INTERNAL SECRETS

Q.1 Fill in the blanks:

1] Energy –giving nutritions are _____and _____.
2] Green plants prepare their own food by using simple _____substances.
3] Cuscuta is plant that harms its _____plant.
4] During the digestion of food, fats are converted into_____acids.
5] Leaves of crotons have colourful regions which are devoid of _____.
6] Plants need nitrogen to _____ proteins.
7] The human heart is about the size of our own _____.
8] In some plants, calcium oxalate forms _____ shaped crystals.

Q.2 Consider the relation between the first pair of words and then write the fourth word to obtain a corresponding pair in each case:

1] Humans: Lungs: Fish: _____.
2] Wind pipe: Trachea: Food pipe: _____.
3] Complex carbohydrates: Glucose:: Proteins : _____.
4] Pancreas: Pancreatic juice:: Liver : _____.
5] Lime water: Carbon dioxide Test:: Iodine solution : _____.

Q3 Correct the following statements:

1] On the basis of their functions, nutrients are divided into two types.
2] Autotrophs use complex organic substances from their surroundings to synthesize their food.
3] All the plants are autotrophs.
4] Plants such as fungi and all the animals are autotrophs.
5] All parasitic plants breakdown the food materials into simple substances outside the body before absorbing it.
6] Parasitic animals and plants obtain nutrition from other organisms without killing or harming host in the process.
7] Unutilized proteins are stored by the plants in the form of starch.
8] Unused glucose is broken down in the liver in the form of glycogen.
9] The villi in the large intestine absorb digested food and salts.
10] Chloroplasts are present in the chlorophyll.
11] Desert plants take up CO_2 during daytime and prepare an intermediate product which is acted upon at night.

12] Gills are the site for uptake of dissolved oxygen into the blood by dispersion.
13] The bronchies provide a very large surface in the lungs for exchange of gases.
14] Blood carries out the functions of synthesis of various materials in the body.
15] Animals such as amphibians and many reptiles have four-Chambered hearts.

Q.4 Identify the odd man and justify your answer:

1] Liver, Pancreas, salivary gland, stomach.
2] Heart, kidneys, Lungs, skin.
3] Larynx, Lungs, Pharynx, Trachea
4] Ammonia, Urea, Uric acid, Water.
5] Bile, Lipase, Pancreatic amylase, Trypsin.
6] Glucose, Maltose, Sucrose, Woodrose.

Q.5A Name each of the following:

1] Two groups of nutrients that have protective and regulatory functions.
2] A plant that folds its leaves when touched.
3] Two types of nutrients classified on the basis of their chemical nature.
4] The organs that remove the waste products from the blood and form urine.
5] Two plants classified as fungi.
6] Two organisms that take in whole food and then break it down to simple substances inside their bodies before absorbing it.
7] Two animals that are external parasites.
8] Two red-coloured dyes used to stain conducting tissues in plants.
9] A solution used to for the presence of starch.
10] A chemical compound used to remove carbon dioxide present in a small enclosed volume of air.

B] State one function of each of the following:

1] Mucus layer in the human stomach.
2] Pancreatic amylase.
3] Valves between atria and ventricles.
4] The vertical muscular wall between the left and right sides of the human heart.

Q6A Name each of the following:

1] Two groups of nutrients that have protective and regulatory function.
2] A plant that folds its leaves when touched.
3] Two types of nutrients classified on the basis of their chemical nature.
4] The organ that remove the waste products from the blood and form urine.
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9] A solution used to test for the presence of starch.
10] A chemical compound used to remove carbon dioxide present in a small enclosed volume of air.

B State one function of each of the following:

1] Mucus layer in the human stomach.
2] Pancreatic amylase.
3] Valves between atria and ventricles.
4] The vertical muscular wall between the left and right sides of the human heart.
5] Valves in the veins.

Q8 Give one sentences answer to each of the following:

1] Name any four processes that are common to all living organism.
2] What is meant by mode of nutrition?
3] What is the significant of the waxy cuticle on the upper and lower surfaces of a leaf?
4] What is pyruvate?
5] Why do mammalian RBC, carry out only anaerobic responsible?
6] In which direction does the lymph flows in our bodies?

Q9 Define/Explain each of the following terms.

1] Nutrition 2] Autotrophic nutrition 3] Autorophs
4] Heterotrophs 5] Ingestion 6] Disestion
7] Assimilation 8] Egestion 9] Absorption of food

Q10 Give scientific reasons:

1] A moving vehicle or a growing crystal is not considered as a living organism.
2] The length of small intestine differs in various animals depending on the type of food they eat.
3] Bile and pancreatic juice enter the duodenum through a common duct.
3] Autotrophs prepare their own food and yet they take nutrients such as iron, magnesium, nitrogen, phosphorus, etc., from their environment.
4] Aquatic animals have a faster rate of respiration as compared to that of terrestrial animals.
5] It is better to breath through our nostrils than through the mouth.
6] The respiratory process is slower in plants than in animals.
7] Capillaries have very thin walls.
8] Arteries have thick and elastic walls.
9] Excretory products must be eliminated from the body of a living organism.
10] The human digestive system has several types of glands located at different parts of the body.

Q11 Write short notes on:

1] Digestion in the mouth 2] Human stomach 3] Photosynthesis
4] The human small intestine 5] The human large intestine 6] Chlorophyll
7] Clotting of blood 8] The human respiratory tract
9] Exchange of gases in the lungs 10] Respiratory organs in terrestrial animal.

CHAPTER 11– THE REGULATORS OF LIFE

Q.1. Fill in the blanks:

1. Oxygen is necessary to obtain energy from _____ and _____acids.
2. All the information from our _____ is picked up.

3. The cavities in the brain are called _____ and the long cavities of the spinal cord are known as the_____ canal.
4. The _____ brain or the _____ is the main thinking part of the brain.
5. Tendrils are sensitive to _____.
6. In frogs, _____ secretion stimulates the metamorphoses from _____ to adult frog.
7. As the level of sugar in the blood fall, the secretion of _____ is _____.
8. The _____ of a seedling grows towards the source of light, whereas the _____ grows away from the light.

Q.2. Match the following columns:

Column I	Column II
1. Auxine	a) Voluntary movement
2. Earth worm	b) Mechanical shocks
3. Breathing	c) An annelidan
4. Cerebrospinal fluid	d) Cranial nerves
5. Peripheral nervous System	e) Hormone
	f) Involuntary movement

Q.3. Name the following:

1. The glands that secrete Hormones.
2. The organ whose cells produce insulin.
3. A series of transformations in the appearance of the young ones of certain types of animals before they become adults.
4. Minute openings in plants through which transpiration takes place.
5. A plant that closes/folds its leaflets and moves its leaves when touched.
6. Movements in plants towards a source of light.
7. The bony structure which protect the brain.
8. Two types of nerves based on their function.

Q.4. Classify the following as voluntary and involuntary.

1. Walking 2. Sneezing 3. Beating a drum

Q.5. Answer each of the following in one sentence.

1. What are growth-independent movements in plants?
2. Name any four insectivorous plants?
3. Why do the fruits of some plant explode?
4. What is the autonomic nervous system comprised of?
5. Give two examples of involuntary organs in the human body?
6. Name the coelenterate having a nervous system at a primitive stage of development.
7. What are nerves composed of?
8. What is cerebrospinal fluid?
9. What are the three main regions of the human brain?
10. Name the three main parts of hind brain.

Q.6. Explain the following terms.

1. Hydrotropic movement.
2. Nerve impulse.
3. Radical.
4. Gravitropic movements.
5. Insectivorous plants
6. Plumule

Q.7. State whether the following statements are True of False. Correct and write the false statements.

1. There is no growth involved in seismonastic movement.
2. In an organism many life processes occur one at a time.
3. Only animals are capable of producing hormones.
4. Balsam plants have explosive seeds that burst open at the appropriate time.
5. The brain is the complex organ.
6. The nervous tissue is a highly organized network of neurons capable of transferring information from one part of the body to another.
7. The growth of pollen tubes towards the ovules is an example of geotropism.
8. In animals, digestion, absorption, circulation and excretion are inter-dependent life processes.
9. Nerves are specialized cells capable of creation and transmitting chemical.
10. The taste buds on the tongue transmit information of different tastes to the spinal cord.

Q.8 Write brief answer to each of the following.

1. In plat s, what process depends on transpiration? What substances present in the soil help these activities?
2. What are tendrils? Name any two plants which have tendrils.
3. What does the CNS comprise of? What is its main function?
4. Which are the four basic tastes that our tongue can detect? Where are the taste buds that can detect these
   Taste located on the tongue?
5. What are meninges? What is their main function?
6. Name the two types of mechanisms in the human body those co-ordinate different activities of the body.
7. Explain with a suitable example, what is a ‘nerve cord’.

Q.9. Give scientific reasons:

1. Any injury to the hind-brain can result in instant death.
2. When we suffer an acute attack of a common cold, the taste and flavor of food seems odd.
3. Plants placed in a shade appear to bend towards the source of light.

Q.10. Write short notes on:

1. Neurons and their classification.
2. Reflex arc.
3. The structure of the human fore-brain.
4. Plant hormones.

CHAPTER 12 – THE LIFE CYCLE

Q.1. Fill in the blanks:

9. Oxygen is necessary to obtain energy from _____ and _____acids.
10. All the information from our _____ is picked up.
11. The cavities in the brain are called _____ and the long cavities of the spinal cord are known as the_____ canal.
12. The _____ brain or the _____is the main thinking part of the brain.
13. Tendrils are sensitive to _____.
14. In frogs, _____ secretion stimulates the metamorphoses from _____ to adult frog.
15. As the level of sugar in the blood fall, the secretion of _____ is _____.
16. The _____ of a seedling grows towards the source of light, whereas the _____ grows away from the light.

Q.2. Match the following columns:

Column I	Column II
6. Auxine	a) Voluntary movement
7. Earth worm	b) Mechanical shocks
8. Breathing	c) An annelidan
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	f) Involuntary movement

Q.3. Name the following:

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10. The organ whose cells produce insulin.
11. A series of transformations in the appearance of the young ones of certain types of animals before they become adults.
12. Minute openings in plants through which transpiration takes place.
13. A plant that closes/folds its leaflets and moves its leaves when touched.
14. Movements in plants towards a source of light.
15. The bony structure which protect the brain.
16. Two types of nerves based on their function.

Q.4. Classify the following as voluntary and involuntary.

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6. Name the coelenterate having a nervous system at a primitive stage of development.

7. What are nerves composed of?
8. What is cerebrospinal fluid?
9. What are the three main regions of the human brain?
10. Name the three main parts of hind brain.

Q.6. Explain the following terms.

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5. Nerve impulse.
6. Radical.
4. Gravitropic movements.
5. Insectivorous plants
6. Plumule

Q.7. State whether the following statements are True of False. Correct and write the false statements.

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12. What are meninges? What is their main function?
13. Name the two types of mechanisms in the human body those co-ordinate different activities of the body.
14. Explain with a suitable example, what is a 'nerve cord'.

Q.9. Give scientific reasons:

4. Any injury to the hind-brain can result in instant death.
5. When we suffer an acute attack of a common cold, the taste and flavor of food seems odd.
6. Plants placed in a shade appear to bend towards the source of light.

Q.10. Write short notes on:

5. Neurons and their classification.

6. Reflex arc.
7. The structure of the human fore-brain.
8. Plant hormones.

13.MAPPING OUR GENES

Q.1. Fill in the blanks:

1. When the mode of reproduction is _____ more diversities are observed.
2. The botanical name of the pea plant is _____.
3. External appearance of an organism is called _____.
4. _____ character is not represented in F_1 generation is homozygous or heterozygous.
5. In the parental generation, the genes separate during the formation of _____.

Q.2.State whether the following statement are 'True' or 'False':

1. In Mendel's experiment, the P_1 generation produced all red flowers.
2. In sexual reproduction, each parent contributes equally to the DNA of the progeny.
3. All children inherit the X Chromosomes from the father.
4. Sex reversal is possible in certain fishes.
5. In human beings. The sex of the child is determined by the chromosomes inherited from the mother.
6. The duck billed platypus has hair and mammary glands like mammals.

Q.3. Define the following:

1. Heredity
2. Dominate character
3. Recessive character.
4. Dihybird cross
5. Genes
6. Analogous organs.
7. Vestigeal organs.
8. Embryology.

Q.4 Answer in short:

1. What do you understand by the term "inherited"?
2. What are the factors for the determination of sex?
3. What were the results observed by Mendel in his experiment on the monohybrid cross in the pea plant with red flowers and pea plants with white flowers?

Q.5. Give scientific reasons:

1. In Birmingham, the population of grey moths is more than population of black moths?
2. Giraffes have very long necks.
3. The height gained by a plant depends upon the efficiency of the enzymes.
4. DNA tests are used to determine the parenthood of a child.
5. Man and monkey have a common ancestry.

Q.6 Distinguish between:

1. Dominant and Recessive character. 2. Pure breeding plants and Hybrid plants.

Q.7. Write short notes:

1. Lamarckian inheritance. 2. DNA.

CHAPTER 14 - Striving for Better Environment Part I

Q1 Fill in the blanks. (1 marks each)

(1) _____ is caused when the environment is dutied by human activity or natural disasters.
(2) Pollution causes great harm ti the _____ of the earth.
(3) Abiotic factor in the ecosystem include _____, _____ and _____.
(4) Air pollution is largely caused due to _____ and _____.
(5) According to the WHO, the countries with most number of premature pollution-related deaths in a descending order are _____, _____, and _____.
(6) Around _____ people die every year in India due to air pollution.
(7) Eutrophication is also known as _____.
(8) Thermal power plants generate a large quantity of _____.
(9) _____ and _____ are also forms of energy.
(10) The stratosphere reaches _____km above the earth's surface.

Q2A Match the columns: (1 marks each)

(1)	Radioactive pollution	(a)	effect of noise pollution
(2)	Biomedical wastes	(b)	enrichment of water bodies
(3)	Water pollution	(c)	cholera, dysentery, etc.
(4)	Eutrophication	(d)	destroys cells, protein enzymes, nucleic acid
(5)	Poor concentration at work	(e)	out dated medicines, syringes, Needles, blades.

Q2B Write whether the following statements are true or false: (1 marks each)

(1) Carbon dioxide is both, important as well as pollutant depending on its percentage of presence.
(2) Open field burning is the main contributor of air pollution due to agriculture.
(3) Manure decomposition reduces green house gases.
(4) Crackers during Diwali increase the level of SO2 in the air about 20 times only .
(5) Ozone is harmful and should ideally be totally absent in the stratosphere.
(6) Noise pollution affects human being on a mental level too.
(7) Using public transport instead of private transport saves only money and has nothing to do with reducing pollution.
(8) The stratospheric ozone is strengthened by chlorofluorocarbon molecules.

Q.3 Name the following: (3 marks each)

(1) Abiotic factors in an ecosystem. (2) Two forms of energy.
(3) A gas that it used by plants for photosynthesis. (4) Types of pollution.

(5) Causes of increasing air pollution in urban areas.
(6) Major sources of air pollution.
(7) Primary air pollutants.
(8) Secondary air pollutants.
(9) Gaseous air pollutants.
(10) Particulate air pollutants.
(11) Natural sources of air pollutants.
(12) Man made sources of air pollution.
(13) Materials emitted by automobiles.
(14) Fossils fuels.
(15) Short term effects of air pollution.
(16) Long term effects of air pollution.
(17) Effects of air pollution on plants.
(18) Types of water pollutants.
(19) Main Biological impurities that pollute water.
(20) Most harmful water pollutants.
(21) Gases emitted during burning of rice straw.
(22) Factors on which air pollutants effects the human body.

Q.4 Answer the following in one to two sentences. (2 marks each)

(1) What is pollution?
(2) What are the different types of pollution?
(3) What is air pollution?
(4) How does air pollution affects animals and plants?
(5) How does the environment suffer due to air pollution?
(6) What is acid rain?
(7) What is ozone layer depletion?
(8) Why does the ozone layer get depleted?
(9) What is the green house effect?
(10) When does organic pollution occur?
(11) Names some effects of acid rain?
(12) What is thermal pollution?
(13) Define Eutrophication.
(14) Name two causes of water pollution?
(15) How do industrial farms pollute air?
(16) What are bio medical wastes?

Q.5 Give scientific reasons for;

(1) Air, Water and Soil pollution ruin the environment.
(2) Acid rain affects the fertility of soil thus ruining agriculture and crop lands.
(3) Refrigerators and air conditioner containing CFCs as coolants have been banned.
(4) Several water organisms die due to Eutrophication.
(5) Pesticides are useful in agriculture.

Q.6 Write the difference between: Industrial waste and domestic waste.

Q.7 Write short notes on: Role of citizens in pollution control.

Q.8 Answer the following question in brief:

(1) How can air pollution be prevented?
(2) How can industries prevent water from polluting?
(3) What is soil pollution? Name the different types of soil pollutants.

CHAPTER 15- Striving for Better Environment Part II

Q1 Fill in the blanks. (1 marks each)

(1) Eco-friendly technology ensures that environmental damage is _____.
(2) Bagasse is used as _____ for boilers.
(3) _____ is a critical resource that is under threat across the globe.

(4) _____ is that which meets the needs of the present without compromising the ability of the future generation to meet their own needs.
(5) Deforestation leads to soil erosion and therefore affects soil_____.
(6) _____ stands for the waste generated by electronic products nearing the end of their useful life.
(7) _____ has adopted the one-child policy to control population growth.
(8) The UNEP stands for_____. (9) PCRA stands for _____.
(10) UNCHE stands for_____. (11) CPCB stands for_____.
(12) MPCB stands for_____.

Q2A Match the columns: (1 marks each)

	A	**B**
(1)	Biogas slurry	(a) eco-friendly cooking option
(2)	Green power	(b) converting energy of tidesinto electricity.
(3)	Eco-efficiency term	(c) major air pollutants
(4)	fossil fuels	(d) bagasse, ethanol
(5)	Tidal powder	(e) good fertilizer
(6)	Pressure cooker	(f) coined by WBCSD

(B)	**A**	**B**
(1)	Bagasse	(a) promote conservation of petrol
(2)	Ethanol	(b) Discarded computers, TVs, Printers, etc
(3)	PCRA	(c) mixed with petrol / diesel to be used as Fuel
(4)	E-waste	(d) biomass of crushed sugarcane stalks

Q2B Write whether the following statements are true or false: (1 marks each)
(1) Biological resources will deplete if their usage is slower than their regeneration.
(2) Fertilizers increase the fertility of land even more
(3) When population growth is curded, the pressure on natural resources will also come down
(4) India follows a one-child policy in order to control its population growth.
(5) Electricity generated by alternative fuels is known as alternative power.
(6) PCRA takes care of pest control in agriculture areas.
(7) Rotational grazing is a good example of sustainable use of pasture land.
(8) Only 1% of the total water on earth is renewed by rain and snowfall and therefore can be of actual use to man.
(9) The 'kullad' is not user friendly since it is not renewable.
(10) A decibel measures distance.

Q3 Name the following: (3 marks each)
(1) Some eco-friendly technologies.
(2) Conventional water heating options.
(3) Material that cells in solar heaters are made of.
(4) A source of energy that is mixed with petrol diesel.
(5) A type of green technology that uses old material to make new products.
(6) Products that are created by recycling paper.

Q4 Answer the following in one to two sentences. (2 marks each)
(1) What can we achieve by using efficient and eco-friendly technology?

(2) by whom was the term eco-efficiency coined and when?
(3) What is green power?
(4) What is Bagasse ?
(5) What are the uses of sugarcane? Do you know Bagasse and its uses?
(6) Write few sentences about PCRA?
(7) What is e-waste?
(8) List the advantages of recycling.

Q5 Give scientific reasons for; (3 marks each)

(1) Pressure cookers are an eco-friendly way of cooking?
(2) Solar water heater is a good example of eco-friendly technology.
(3) Ethanol is an alternative source of energy.
(4) CNG is a good alternative fuel.
(5) durable goods are preferred by people.
(6) Using bio-gas plant is a step towards environmental awareness.

Q6 Answer in brief: (5 marks)

(1) How can we as individual control usage of resources?
(2) What are the powers of CPCB?
(3) What are the different powers held by central government with regard to protecting and improving the quality of the environment?
(4) please provide some information on Chipko movement, Narmada Bachao Andolan, Beej Bachao Andolan.

Q7 Write short notes on: (3 marks)

(1) Conservation of biological resources.
(2) Population control.
(3) Objectives of the UNEP.
(4) Hazardous waste (Handling and Management) Rules, 1989.
(5) Sources of noise pollution.
(6) Silence zone.