MINIMUM LEARNING MATERIAL

10

SCIENCE

PREPARED BY

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LESSON – 12

I. Choose the correct answer

1. Casparian strips are present in the of the root.
a) Cortex b) pith c) pericycle d) endodermis
2. The endarch condition is the characteristic feature of
a) Root b) stem c) leaves d) flower
3. The xylem and phloem arranged side by side on same radius is called
a) Radial b) amphivasal c) conjoint d) None of these
4. Which is formed during anaerobic respiration
a) Carbohydrate b) Ethyl alcohol c)Acetyl CoA d) Pyruvate
5. Kreb's cycle takes place in
a) Chloroplast b) mitochondrial matrix
c) Stomata d) inner mitochondrial membrane
6. Oxygen is produced at what point during photosynthesis ?
a) when ATP is converted to ADP b) when CO_2 is fixed
c) when H_2O is splitted d) All of these

II. Fill in the blanks

1. Cortex lies between _____.
2. Xylem and phloem occurring on the same radius constitute a vascular bundle called _____.
3. Glycolysis takes place in _____.
4. The source of O_2 liberated in photosynthesis is _____.
5. _____is ATP factory of the cells

III. State whether the statements are true or false. Correct the false statement

1. Phloem tissue is involved in the transport of water in plant.
2. The waxy protective covering of a plant is called as cuticle.
3. In monocot stem cambium is present in between xylem and phloem.
4. Palisade parenchyma cells occur below upper epidermis in dicot root.
5. Mesophyll contains chlorophyll.
6. Anaerobic respiration produces more ATP than aerobic respiration.

IV. Match the following

1. Amphicribal	-	Dracaena
2. Cambium	-	Translocation of food
3. Amphivasal	-	Fern
4. Xylem	-	Secondary growth
5. Phloem	-	Conduction of water

V. Answer in a sentence

1. What is collateral vascular bundle?
2. Where does the carbon that is used in photosynthesis come from?
3. What is the common step in aerobic and anaerobic pathway?
4. Name the phenomenon by which carbohydrates are oxidized to release ethyl alcohol.

VI. Short answer questions

1. Draw and label the structure of oxysomes.
2. Name the three basic tissues system in flowering plants.
3. What is photosynthesis and where in a cell does it occur?
4. What is respiratory quotient?
5. Write the reaction for photosynthesis.

VII. Long answer questions

1. Differentiate the following
a) Monocot root and Dicot root
b) Aerobic and Anaerobic respiration
2. Describe and name three stages of cellular respiration that aerobic organisms use to obtain energy from glucose.
3. How does the light dependent reaction differ from the light independent reaction? What are the end product and reactants in each? Where does each reaction occur within the chloroplast?

LESSON – 13

I. Choose the correct answer

1. In leech locomotion is performed by
a) Anterior sucker b) Posterior sucker c) Setae d) None of the above
2. The segments of leech are known as
a) Metameres (somites) b) Proglottids c) Strobila d) All the above
3. Pharyngeal ganglion in leech is a part of
a) Excretory system b) Nervous system
c) Reproductive system d) Respiratory system
4. The brain of leech lies above the
a) Mouth b) Buccal Cavity c) Pharynx d) Crop
5. The body of leech has
a) 23 segments b) 33 segments c) 38 segments d) 30 segments
6. Mammals are _____ animals.
a) Cold blooded b) Warm blooded c) Poikilothermic d) All the above
7. The animals which give birth to young ones are
a) Oviparous b) Viviparous c) Ovoviviparous d) All the above

II. Fill in the blanks

1. The posterior sucker is formed by the fusion of the _____ segments.
2. The existence of two sets of teeth in the life of an animal is called _____ dentition.
3. The anterior end of leech has a lobe-like structure called _____.
4. The blood sucking habit of leech is known as _____.
5. _____ separate nitrogenous waste from the blood in rabbit.
7. _____ spinal nerves are present in rabbit.

III. Identify whether the statements are true or false. Correct the false statement

1. An anticoagulant present in saliva of leech is called heparin.
2. The vas deferens serves to transport the ovum.
3. The rabbit has a third eyelid called tympanic membrane which is movable.
4. Diastema is a gap between premolar and molar teeth in rabbit.
5. The cerebral hemispheres of rabbit are connected by band of nerve tissue called corpora quadrigemina.

IV. Match columns I, II and III correctly

Organs	Membranous Covering	Location
Brain	pleura	abdominal cavity
Kidney	capsule	mediastinum
Heart	meninges	enclosed in thoracic cavity
Lungs	pericardium	cranial cavity

V. Answer in a sentence

1. Give the common name of the Hirudinaria granulosa.
2. Write the dental formula of rabbit.
3. How is diastema formed in rabbit?
4. How does leech suck blood from the host?

VI. Short answer questions

1. Why are the rings of cartilages found in trachea of rabbit?
2. List out the parasitic adaptations in leech.

VII. Long answer questions

1. How does locomotion take place in leech?
2. Explain the male reproductive system of rabbit with a labeled diagram.

LESSON – 14

I. Choose the correct answer

1. Active transport involves
a) movement of molecules from lower to higher concentration
b) expenditure of energy c) it is an uphill task d) all of the above
2. Water which is absorbed by roots is transported to aerial parts of the plant through
a) cortex b) epidermis c) phloem d) xylem
3. During transpiration there is loss of
a) carbon dioxide b) oxygen c) water d) none of the above
4. Root hairs are
a) cortical cell b) projection of epidermal cell c) unicellular d) both b and c
5. Which of the following process requires energy?
a) active transport b) diffusion c) osmosis d) all of them
6. The wall of human heart is made of
a) Endocardium b) Epicardium c) Myocardium d) All of the above
7. Which is the sequence of correct blood flow
a) ventricle - atrium - vein – arteries b) atrium - ventricle - veins - arteries
c) atrium - ventricle - arteries – vein d) ventricles - vein - atrium - arteries
8. A patient with blood group O was injured in an accident and has blood loss. Which blood group the doctor should effectively use for transfusion in this condition?
a) O group b) AB group c) A or B group d) all blood group
9. 'Heart of heart' is called
a) SA node b) AV node c) Purkinje fibres d) Bundle of His
10. Which one of the following regarding blood composition is correct
a) Plasma - Blood + Lymphocyte b) Serum - Blood + Fibrinogen
c) Lymph - Plasma + RBC + WBC d) Blood - Plasma + RBC+ WBC +Platelets

II. Fill in the blanks

1. _____ involves evaporative loss of water from aerial parts.
2. Water enters the root cell through a _____ plasma membrane.
3. Structures in roots that help to absorb water are _____.
4. Normal blood pressure is _____.
5. The normal human heartbeat rate is about _____ time per minute.

III. Match the following

Section I

1. Symplastic pathway	-	Leaf
2. Transpiration	-	Plasmodesmata
3. Osmosis	-	Pressure in xylem
4. Root Pressure	-	Pressure gradient

Section II

1. Leukemia	-	Thrombocytes
2. Platelets	-	Phagocyte
3. Monocytes	-	Decrease in leucocytes
4. Leucopenia	-	Blood Cancer
5. AB blood group	-	Allergic condition
6. O blood group	-	Inflammation
7. Eosinophil	-	Absence of antigen
8. Neutrophils	-	Absence of antibody

IV. State whether True or False. If false write the correct statement

1. The phloem is responsible for the translocation of food.
2. Plants lose water by the process of transpiration.
3. The form of sugar transported through the phloem is glucose.
4. In apoplastic movement the water travels through the cell membrane and enter the cell.
5. When guard cells lose water the stoma opens.
6. Initiation and stimulation of heart beat take place by nerves.
7. All veins carry deoxygenated blood.
8. WBC defend the body from bacterial and viral infections.
9. The closure of the mitral and tricuspid valves at the start of the ventricular systole produces the first sound 'LUBB'.

V. Answer in a word or sentence

1. Name two layered protective covering of human heart.
2. Why is the colour of the blood red ?

VI. Short answer questions

1. Why is the circulation in man referred to as double circulation?
2. What are heart sounds? How are they produced?

VII. Give reasons for the following statements

1. Minerals cannot be passively absorbed by the roots.
2. Minerals in the plants are not lost when the leaf falls.
3. Mature RBC in mammals do not have cell organelles.

VIII. Long answer questions

1. Why are leucocytes classified as granulocytes and agranulocytes? Name each cell and mention its functions.

LESSON – 15

I. Choose the correct answer

1. Bipolar neurons are found in
(a) retina of eye (b) cerebral cortex
(c) embryo (d) respiratory epithelium
2. Site for processing of vision, hearing, memory, speech, intelligence and thought is
(a) kidney (b) ear (c) brain (d) lungs
3. In reflex action, the reflex arc is formed by
(a) brain, spinal cord, muscle (b) receptor, muscle, spinal cord
(c) muscle, receptor, brain (d) receptor, spinal cord, muscle
4. Dendrites transmit impulse cell body and axon transmits impulse cell body.
(a) away from, away from (b) towards, away from
(c) towards,towards (d) away from, towards
5. The outer most of the three cranial meninges is
(a) arachnoid membrane (b) piamater (c) duramater (d) myelin sheath
6. There are pairs of cranial nerves and pairs of spinal nerves.
(a) 12, 31 (b) 31, 12 (c) 12, 13 (d) 12, 21
7. The neurons which carries impulse from the central nervous system to the muscle fibre.
(a) afferent neurons (b) association neuron
(c) efferent neuron (d) unipolar neuron
8. Which nervous band connects the two cerebral hemispheres of brain?
(a) thalamus (b) hypothalamus (c) corpus callosum (d) pons
9. Node of Ranvier is found in
(a) muscles (b) axons (c) dendrites (d) cyton
10. Vomiting centre is located in
(a) medulla oblongata (b) stomach (c) cerebrum (d) hypothalamus
11. Nerve cells do not possess
(a) neurilemma (b) sarcolemma (c) axon (d) dendrites
12. A person who met with an accident lost control of body temperature, water balance, and hunger. Which of the following part of brain is supposed to be? damaged?
(a) Medulla oblongata (b) cerebrum (c) pons (d) hypothalamus

II. Fill in the blanks

1. _____is the longest cell in our body.
2. Impulses travel rapidly in _____ neurons.
3. A change in the environment that causes an animal to react is called _____.
4. _____carries the impulse towards the cell body.
5. The two antagonistic component of autonomic nervous system are ____and_____ .
6. A neuron contains all cell organelles except _____.
7. _____maintains the constant pressure inside the cranium.
8. _____and_____ increases the surface area of cerebrum.
9. The part of human brain which acts as relay center is _____.

III. State whether true or false, if false write the correct statement

1. Dendrons are the longest fibres that conduct impulses away from the cell body.
2. Sympathetic nervous system is a part of central nervous system.
3. Hypothalamus is the thermoregulatory centre of human body.
4. Cerebrum controls the voluntary actions of our body.
5. In the central nervous system myelinated fibres form the white matter.
6. All the nerves in the body are covered and protected by meninges.
7. Cerebrospinal fluid provides nutrition to brain.
8. Reflex arc allows the rapid response of the body to a stimulus.
9. Pons helps in regulating respiration.

IV. Match the following

Column I	Column II
A. Nissil's granules	Forebrain
B. Hypothalamus	Peripheral Nervous system
C. Cerebellum	Cyton
D. Schwann cell	Hindbrain

V. Understand the assertion statement.

Justify the reason given and choose the correct choice
a. Assertion is correct and reason is wrong
b. Reason is correct and the assertion is wrong
c. Both assertion and reason are correct
d. Both assertion and reason are wrong
1. Assertion: Cerebrospinal fluid is present throughout the central nervous system.
Reason: Cerebrospinal fluid has no such functions.
2. Assertion: Corpus callosum is present in space between the duramater and piamater.
Reason: It serves to maintain the constant intracranial pressure.

VI. Short answer questions

1. Define stimulus.
2. Which acts as a link between the nervous system and endocrine system?
3. Define reflex arc.

VII. Differentiate between

1. Voluntary and involuntary actions.

VIII. Long answer questions

1. With a neat labelled diagram explain the structure of a neuron.
2. Illustrate the structure and functions of brain.
3. Describe the structure of spinal cord.

LESSON – 16

I.Choose the correct answer

1. Gibberellins cause:
a) Shortening of genetically tall plants b) Elongation of dwarf plants
c) Promotion of rooting d) Yellowing of young leaves
2. The hormone which has positive effect on apical dominance is:
a) Cytokinin b) Auxin c) Gibberellin d) Ethylene
3. Which one of the following hormones is naturally not found in plants:
a) 2, 4-D b) GA3 c) Gibberellin d) IAA
4. Avena coleoptile test was conducted by
a) Darwin b) N. Smit c) Paal d) F.W. Went
5. To increase the sugar production in sugarcanes they are sprayed with _____
a) Auxin b) Cytokinin c) Gibberellins d) Ethylene
6. LH is secreted by
a) Adrenal gland b) Thyroid gland c) Anterior pituitary d) Hypothalamus.
7. Identify the exocrine gland
a) Pituitary gland b) Adrenal gland c) Salivary gland d) Thyroid gland
8. Which organ acts as both exocrine gland as well as endocrine gland
a) Pancreas b) Kidney c) Liver d) Lungs
9. Which one is referred as “Master Gland”?
a) Pineal gland b) Pituitary gland c) Thyroid gland d) Adrenal gland

II.Fill in the blanks

1. _____ causes cell elongation, apical dominance and prevents abscission.
2. _____ is a gaseous hormone involved in abscission of organs and acceleration of fruit ripening.
3. _____ causes stomatal closure.
4. Gibberellins induce stem elongation in _____ plants.
5. The hormone which has negative effect on apical dominance is _____.
6. Calcium metabolism of the body is controlled by _____.
7. In the islets of Langerhans, beta cells secrete _____.
8. The growth and functions of thyroid gland is controlled by _____.
9. Decreased secretion of thyroid hormones in the children leads to _____.

III. a) Match Column I with Columns II and III

Column I	Column II	Column III
Auxin	Gibberella fujikuroi	Abscission
Ethylene	Coconut milk	Internodal elongatin
Abscisic acid	Coleoptile tip	Apical dominance
Cytokinin	Chloroplast	Ripening
Gibberellins	Fruits	Cell division

III. b) Match the following hormones with their deficiency states

Hormones		Disorders
a) Thyroxine	-	Acromegaly
b) Insulin	-	Tetany
c) Parathormone	-	Simple goitre
d) Growth hormone	-	Diabetes insipidus
e) ADH	-	Diabetes mellitus

IV.State whether True or false, If false write the correct statement

1. A plant hormone concerned with stimulation of cell division and promotion of nutrient mobilization is cytokinin.
2. Gibberellins cause parthenocarpy in tomato.
3. Ethylene retards senescence of leaves, flowers and fruits.
4. Exopthalmic goiter is due to the over secretion of thyroxine.
5. Pituitary gland is divided into four lobes.
6. Estrogen is secreted by corpus luteum.

V. Assertion and Reasoning

Direction: In each of the following questions a statement of assertion (A) is given and a corresponding statement of reason (R) is given just below it. Mark the correct statement as.
a. If both A and R are true and R is correct explanation of A
b. If both A and R are true but R is not the correct explanation of A
c. A is true but R is false d. Both A and R are false
1. Assertion: Application of cytokinin to marketed vegetables can keep them fresh for several days.
Reason: Cytokinins delay senescence of leaves and other organs by mobilisation of nutrients.
2. Assertion (A): Pituitary gland is referred as “Master gland”.
Reason (R): It controls the functioning of other endocrine glands.
3. Assertion (A): Diabetes mellitus increases the blood sugar levels.
Reason (R):Insulin decreases the blood sugar levels.

VI. Answer in a word or sentence

1. Write the name of a synthetic auxin.
2. What is the hormone responsible for the secretion of milk in female after child birth?
3. Which hormone is secreted during emergency situation in man?

VII. Short answer questions

1. What is bolting? How can it be induced artificially?
2. Write the differences between endocrine and exocrine gland.
3. What are the hormones secreted by posterior lobe of the pituitary gland? Mention the tissues on which they exert their effect.

VIII. Long answer questions

1. Describe an experiment which demonstrates that growth stimulating hormone is produced at the tip of coleoptile.
2. Write the physiological effects of gibberellins.
3. Where are estrogens produced? What is the role of estrogens in the human body?

LESSON – 17

I. Choose the correct answer

1. The plant which propagates with the help of its leaves is _____.
a) Onion b) Neem c) Ginger d) Bryophyllum
2. Asexual reproduction takes place through budding in _____ .
a) Amoeba b) Yeast c) Plasmodium d) Bacteria
3. Syngamy results in the formation of _____ .
a) Zoospores b) Conidia c) Zygote d) Chlamydospores
4. The essential parts of a flower are _____ .
a) Calyx and Corolla b) Calyx and Androecium
c) Corolla and Gynoecium d) Androecium and Gynoecium
5. Anemophilous flowers have _____ .
a) Sessile stigma b) Small smooth stigma
c) Colored flower d) Large feathery stigma
6. Male gametes in angiosperms are formed by the division of _____ .
a) Generative cell b) Vegetative cell
c) Microspore mother cell d) Microspore
7 What is true of gametes?
a) They are diploid b) They give rise to gonads
c) They produce hormones d) They are formed from gonads
8. A single highly coiled tube where sperms are stored, get concentrated and mature is known as
a) Epididymis b) Vasa efferentia c) Vas deferens d) Seminiferous tubules
9. The large elongated cells that provide nutrition to developing sperms are
a) Primary germ cells b) Sertoli cells c) Leydig cells d) Spermatogonia
10 Estrogen is secreted by
a) Anterior pituitary b) Primary follicle c) Graffian follicle d) Corpus luteum
11. Which one of the following is an IUCD?
a) Copper – T b) Oral pills c) Diaphragm d) Tubectomy

II. Fill in the blanks

1. The embryo sac in a typical dicot at the time of fertilization is _____ .
2. After fertilization the ovary develops into _____ .
3. Planaria reproduces asexually by _____ .
4. Fertilization is _____ in humans.
5. The implantation of the embryo occurs at about _____ day of fertilization.
6. _____ is the first secretion from the mammary gland after child birth.
7. Prolactin is a hormone produced by _____ .

III. (a) Match the following

Column 1	Column 2
Fission	Spirogyra
Budding	Amoeba
Fragmentation	Yeast

III. (b) Match the following terms with their respective meanings

a) Parturition - 1) Duration between pregnancy and birth
b) Gestation - 2) Attachment of zygote to endometrium
c) Ovulation - 3) Delivery of baby from uterus
d) Implantation - 4) Release of egg from Graafian follicle

IV. State whether the following statements are True or False. Correct the false statement

1. Stalk of the ovule is called pedicle.
2. Seeds are the product of asexual reproduction.
3. Yeast reproduces asexually by means of multiple fission.
4. The part of the pistil which serves as a receptive structure for the pollen is called as style.
5. Insect pollinated flowers are characterized by dry and smooth pollen.
6. Sex organs produce gametes which are diploid.
7. LH is secreted by the posterior pituitary.
8. Menstrual cycle ceases during pregnancy.
9. Surgical methods of contraception prevent gamete formation.
10. The increased level of estrogen and progesterone is responsible for menstruation.

V. Answer in a word or sentence

1. Mention the function of endosperm.
2. Name the hormone responsible for the vigorous contractions of the uterine muscles.
3. What is the enzyme present in acrosome of sperm?

VI. Short answer question

1. How does binary fission differ from multiple fission?
2. Define triple fusion.
3. What is colostrum? How milk production is hormonally regulated?
3. How does developing embryo gets its nourishment inside the mother's body?
4. Why are the human testes located outside the abdominal cavity? Name the pouch in which they are present.

VII. Long answer questions

1. What are the phases of menstrual cycle? Indicate the changes in the ovary and uterus.

LESSON – 18

I. Choose the correct answer

1. According to Mendel alleles have the following character
a) Pair of genes b) Responsible for character
c) Production of gametes d) Recessive factors
2. 9 : 3 : 3 : 1 ratio is due to
a) Segregation b) Crossing over
c) Independent assortment d) Recessiveness
3. The region of the chromosome where the spindle fibres get attached during cell division
a) Chromomere b) Centrosome c) Centromere d) Chromonema
4. The centromere is found at the centre of the _____ chromosome.
a) Telocentric b) Metacentric c) Sub-metacentric d) Acrocentric
5. The _____ units form the backbone of the DNA.
a) 5 carbon sugar b) Phosphate c) Nitrogenous bases d) Sugar phosphate
6. Okasaki fragments are joined together by _____.
a) Helicase b) DNA polymerase c) RNA primer d) DNA ligase
7. The number of chromosomes found in human beings are _____.
a) 22 pairs of autosomes and 1 pair of allosomes.
b) 22 autosomes and 1 allosome
c) 46 autosomes d) 46 pairs autosomes and 1 pair of allosomes.
8. The loss of one or more chromosome in a ploidy is called _____.
a) Tetraploidy b) Aneuploidy c) Euploidy d) polyploidy

II. Fill in the blanks

1. The pairs of contrasting character (traits) of Mendel are called _____.
2. Physical expression of a gene is called _____
3. The thin thread like structures found in the nucleus of each cell are called__.
4. DNA consists of two _____ chains
5. An inheritable change in the amount or the structure of a gene or a chromosome is called _____.

III. Identify whether the statement are True or False. Correct the false statement

1. A typical Mendelian dihybrid ratio of F2 generation is 3:1.
2. A recessive factor is altered by the presence of a dominant factor.
3. Each gamete has only one allele of a gene.
4. Hybrid is an offspring from a cross between genetically different parents.
5. Some of the chromosomes have an elongated knob-like appendage known as telomere.
6. New nucleotides are added and new complementary strand of DNA is formed with the help of enzyme DNA polymerase.
7. Down's syndrome is the genetic condition with 45 chromosomes.

IV. Match the following

1. Autosomes	-	Trisomy 21
2. Diploid condition	-	9:3:3:1
3. Allosome	-	22 pair of chromosome
4. Down's syndrome	-	2n
5. Dihybrid ratio	-	23rd pair of chromosome

V. Answer in a sentence

1. A garden pea plant produces axial white flowers. Another of the same species produced terminal violet flowers. Identify the dominant trait?
2. Name the bond which binds the nucleotides in a DNA.

VI. Short answers questions

1. What do you understand by the term phenotype and genotype?
2. What are allosomes?
3. What are Okazaki fragments?
4. Explain the structure of a chromosome.

VII. Long answer questions

1. Explain with an example the inheritance of dihybrid cross. How is it different from monohybrid cross?
2. How is the structure of DNA organised? What is the biological significance of DNA?
3. The sex of the new born child is a matter of chance and neither of the parents may be considered responsible for it. What would be the possible fusion of gametes to determine the sex of the child?

LESSON – 19

I. Choose the correct answer

1. Biogenetic law states that _____
a. Ontogeny and phylogeny go together
b. Ontogeny recapitulates phylogeny
c. Phylogeny recapitulates ontogeny
d. There is no relationship between phylogeny and ontogeny
2. The 'use and disuse theory' was proposed by _____.
a. Charles Darwin b. Ernst Haeckel
c. Jean Baptiste Lamarck d. Gregor Mendel
3. Paleontologists deal with
a. Embryological evidences b. Fossil evidences
c. Vestigial organ evidences d. All the above
4. The best way of direct dating fossils of recent origin is by
a. Radio-carbon method b. Uranium lead method
c. Potassium-argon method d. Both (a) and (c)
5. The term Ethnobotany was coined by
a. Khorana b. J.W. Harsbberger
c. Ronald Ross d. Hugo de Vries

II. Fill in the blanks

1. The characters developed by the animals during their life time, in response to the environmental changes are called _____.
2. The degenerated and non-functional organs found in an organism are called____.
3. The forelimbs of bat and human are examples of _____ organs.
4. The theory of natural selection for evolution was proposed by _____.

III. State true or false. Correct the false statements

1. The use and disuse theory of organs' was postulated by Charles Darwin.
2. The homologous organs look similar and perform similar functions but they have different origin and developmental pattern.
3. Birds have evolved from reptiles.

IV. Match the following

Column A	**Column B**
a) Atavism	caudal vertebrae and vermiform appendix
b) Vestigial organs	a forelimb of a cat and a bat's wing
c) Analogous organs	rudimentary tail and thick hair on the body
d) Homologous organs	a wing of a bat and a wing of an insect
e) Wood park	radiocarbon dating
f) W.F. Libby	Thiruvakkarai

V. Answer in a word or sentence

1. Which organism is considered to be the fossil bird?

VI. Short answers questions

1. Why is Archaeopteryx considered to be a connecting link?
2. How can you determine the age of the fossils?

VII Long answer questions

1. Natural selection is a driving force for evolution-How?
2. How do you differentiate homologous organs from analogous organs?

LESSON – 20

I. Choose the correct answer

1. Which method of crop improvement can be practised by a farmer if he is inexperienced?
a. clonal selection b. mass selection c. pureline selection d. hybridisation
2. Pusa Komal is a disease resistant variety of _____.
a. sugarcane b. rice c. cow pea d. maize
3. Himgiri developed by hybridisation and selection for disease resistance against rust pathogens is a variety of _____.
a. chilli b. maize c. sugarcane d. wheat
4. The miracle rice which saved millions of lives and celebrated its 50th birthday is _____
a. IR 8 b. IR 24 c. Atomita 2 d. Ponni
5. Which of the following is used to produce products useful to humans by biotechnology techniques?
a. enzyme from organism b. live organism
c. vitamins d. both (a) and (b)
6. We can cut the DNA with the help of
a. scissors b. restriction endonucleases c. knife d. RNAase
7. rDNA is a
a. vector DNA b. circular DNA
c. recombinant of vector DNA and desired DNA d. satellite DNA
8. DNA fingerprinting is based on the principle of identifying ---------- sequences of DNA
a. single stranded b. mutated c. polymorphic d. repetitive
9. Organisms with modified endogenous gene or a foregin gene are also known as
(a) transgenic organisms (b) genetically modified
(c) mutated (d) both a and b
10. In a hexaploid wheat(2n = 6 x = 42) the haploid (n) and the basic(x) number of chromosomes respectively are
a. n = 7 and x = 21 b. n = 21 and x = 21
c. n = 7 and x = 7 d. n = 21 and x = 7

II. Fill in the blanks

1. Economically important crop plants with superior quality are raisedby____.
2. A protein rich wheat variety is _____.
3. _____is the chemical used for doubling the chromosomes.
4. The scientific process which produces crop plants enriched with desirable nutrients is called _____.
5. Rice normally grows well in alluvial soil, but _____ is a rice variety produced by mutation breeding that grows well in saline soil.
6. _____ technique made it possible to genetically engineer living organism.
7. Restriction endonucleases cut the DNA molecule at specific positions known as _____.
8. Similar DNA fingerprinting is obtained for _____.
9. _____ cells are undifferentiated mass of cells.
10. In gene cloning the DNA of interest is integrated in a _____.

III. State whether true or false. If false, write the correct statement

1. Raphano brassica is a man-made tetraploid produced by colchicine treatment.
2. The process of producing an organism with more than two sets of chromosome is called mutation.
3. A group of plants produced from a single plant through vegetative or asexual reproduction are called a pureline.
4. Iron fortified rice variety determines the protein quality of the cultivated plant
5. Golden rice is a hybrid.
6. Bt gene from bacteria can kill insects.
7. In vitro fertilisation means the fertilization done inside the body.
8. DNA fingerprinting technique was developed by Alec Jeffrey.
9. Molecular scissors refers to DNA ligases.

IV. Match the following

Column A	**Column B**
1. Sonalika	Phaseolus mungo
2. IR 8	Sugarcane
3. Saccharum	Semidwarf wheat
4. Mung No. 1	Ground nut
5. TMV – 2	Semi-dwarf Rice
6. Insulin	Bacillus thuringienesis
7. Bt toxin	Beta carotene
8. Golden rice	first hormone produced using rDNA technique

V. Understand the assertion statement, justify the reason given and choose thecorrect choice

a. Assertion is correct and reason is wrong
b. Reason is correct and the assertion is wrong
c. Both assertion and reason is correct
d. Both assertion and reason is wrong.
1. Assertion: Hybrid is superior than either of its parents.
Reason: Hybrid vigour is lost upon inbreeding.
2. Assertion: Colchicine reduces the chromosome number.
Reason: It promotes the movement of sister chromatids to the opposite poles.
3. Assertion: rDNA is superior over hybridisation techniques.
Reason: Desired genes are inserted without introducing the undesriablegenes in target organisms.

VI. Answer in a sentence
1. Give the name of wheat variety having higher dietary fibre and protein.
2. Define genetic engineering.
3. What are transgenic organisms?

VII. Short answers questions
1. Name two maize hybrids rich in amino acid lysine
2. Distinguish between
   a. somatic gene therapy and germ line gene therapy
   b. undifferentiated cells and differentiated cells
3. State the applications of DNA fingerprinting technique.
4. Differentiate between outbreeding and inbreeding.

VIII. Long answers questions

1. Describe mutation breeding with an example.
2. With a neat labelled diagram explain the techniques involved in gene cloning.
3. Discuss the importance of biotechnology in the field of medicine.

LESSON – 21

I. Choose the correct answer

1. Tobacco consumption is known to stimulate secretion of adrenaline. The component causing this could be
a) Nicotine b) Tannic acid c) Curcumin d) Leptin
2. World 'No Tobacco Day' is observed on
a) May 31 b) June 6 c) April 22 d) October 2
3. Cancer cells are more easily damaged by radiations than normal cells because they are
a) Different in structure b) Non-dividing
c) Mutated Cells d) Undergoing rapid divisionTEXN
4. Which type of cancer affects lymph nodes and spleen?
a) Carcinoma b) Sarcoma c) Leukemia d) Lymphoma
5. Excessive consumption of alcohol leads to
a) Loss of memory b) Cirrhosis of liver
c) State of hallucination d) Supression of brain function
6. Coronary heart disease is due to
a) Streptococci bacteria
b) Inflammation of pericardium
c)Weakening of heart valves
d) Insufficient blood supply to heart muscles
7. Cancer of the epithelial cells is called
a) Leukemia b) Sarcoma c) Carcinoma d) Lipoma
8. Metastasis is associated with
a) Malignant tumour b) Benign tumour
c) Both (a) and (b) d) Crown gall tumour
9. Polyphagia is a condition seen in
a) Obesity b) Diabetes mellitus c) Diabetes insipidus d) AIDS
10. Where does alcohol effect immediately after drinking?
a) Eyes b) Auditory region c) Liver d) Central nervous system

II. State whether True or False, if false write the correct statement

1. AIDS is an epidemic disease.
2. Cancer causing genes are called Oncogenes.
3. Obesity is characterized by tumour formation.
4. In leukemia both WBCs and RBCs increase in number.
5. Study of cause of disease is called etiology.
6. AIDS is not transmitted by contact with a patient's clothes.
7. Type 2 diabetes mellitus results due to insulin deficiency.
8. Carcinogens are cancer causing agents.
9. Nicotine is a narcotic drug.
10. Cirrhosis is associated with brain disorder.

III. Expand the following abbreviations

1. IDDM 2. HIV 3. BMI 4. AIDS 5. CHD 6. NIDDM

IV. Match the following

1. Sarcoma	-	Stomach cancer
2. Carcinoma	-	Excessive thirst
3. Polydipsia	-	Excessive hunger
4. Polyphagia	-	Lack of blood flow to heart muscle
5. Myocardial Infarction	-	Connective tissue cancer

V. Fill in the blanks
1. Cirrhosis is caused in liver due to excessive use of _____
2. A highly poisonous chemicals derived from tobacco is _____
3. Blood cancer is called _____.
4. Less response of a drug to a specific dose with repeated use is called _____
5. Insulin resistance is a condition in _____diabetes mellitus

VI. Analogy type questions. Identify the first words and their relationship and suggest a suitable word for the fourth blank
1. Communicable: AIDS
Non communicable: _____
2. Chemotherapy: Chemicals
Radiation therapy: _____
3. Hypertension: Hypercholesterolomia
Glycosuria: _____

VII. Answer in a sentence

1. Mention the diseases caused by tobacco smoke.
2. What is metastasis?
3. How does insulin deficiency occur?

VIII. Short answer questions

1. What are the various routes by which transmission of human immuno deficiency virus takes place ?
2. How is a cancer cell different from a normal cell ?
3. Differentiate between Type-1 and Type-2 diabetes mellitus
5. What precautions can be taken for preventing heart diseases ?

IX. Long answer questions

1. Changes in lifestyle is a risk factor for occurrence of cardiovascular diseases. Can it be modified ? If yes, suggest measures for prevention.

LESSON – 22

I. Fill in the blanks

1. Deforestation leads to _____ in rainfall.
2. Removal of soil particles from the land is called _____.
3. Chipko movement is initiated against _____ .
4. _____ is a biosphere reserve in Tamilnadu.
5. Tidal energy is _____ type of energy.
6. Coal, petroleum and natural gas are called _____ fuels.
7. _____ is the most commonly used fuel for the production of electricity.

II. State whether True or False. Correct the statements which are false

1. Biogas is a fossil fuel.
2. Planting trees increases the groundwater level.
3. Habitat destruction cause loss of wild life.
4. Nuclear energy is a renewable energy.
5. Overgrazing prevents soil erosion.
6. Poaching of wild animals is a legal act.
7. National park is a protected park.
8. Wild life protection act was established in 1972.

III. Match the following

1. Soil erosion	-	energy saving
2. Bio gas	-	acid rain
3. Natural gas	-	removal of vegetation
4. Green house gas	-	renewable energy
5. CFL bulbs	-	CO_2
6. Wind	-	non-renewable energy
7. Solid waste	-	lead and heavy metals

IV. Choose the correct answer

1. Which of the following is / are a fossil fuel?
i. Tar ii. Coal iii. Petroleum
a) i only b) i and ii c) ii and iii d) i, ii and iii
2. What are the steps will you adopt for better waste management?
a) reduce the amount of waste formed b) reuse the waste
c) recycle the waste d) all of the above

3. The gas released from vehicles exhaust are
i. carbon monoxide ii. Sulphur dioxide iii. Oxides of nitrogen
a) i and ii b) i and iii c) ii and iii d) i, ii and iii
4. Soil erosion can be prevented by
a) deforestation b) afforestion c) over growing d) removal of vegetation
5. A renewable source of energy is
a) petroleum b) coal c) nuclear fuel d) trees
6. Soil erosion is more where there is
a) no rain fall b) low rainfall c) rain fall is high d) none of these
7. An inexhaustible resources is
a) wind power b) soil fertility c) wild life d) all of the above
8. Common energy source in village is
a) electricity b) coal c) biogas d) wood and animal dung
9. Green house effect refers to
a) cooling of earth b) trapping of UV rays
c) cultivation of plants d) warming of earth
10. A cheap, conventional, commercial and inexhaustible source of energy is
a) hydropower b) solar energy c) wind energy. d) thermal energy
11. Global warming will cause
a) raise in level of oceans b) melting of glaciers
c) sinking of islands d) all of these
12. Which of the following statement is wrong with respect to wind energy
a) wind energy is a renewable energy
b) the blades of wind mill are operated with the help of electric motor
c) production of wind energy is pollution free
d) usage of wind energy can reduce the consumption of fossil fuels

V. Answer in a sentence

1. What would happen if the habitat of wild animals is disturbed?
2. What are the agents of soil erosion?
3. Solar energy is a renewable energy. How?

VI. Short answer questions

1. What is the importance of rainwater harvesting?
2. What are the consequences of deforestation?

VII. Long answer questions

1. How does rainwater harvesting structures recharge ground water?
2. Enumerate the importance of forest.
3. What are the consequences of soil erosion?
4. Why is the management of forest and wildlife resource considered as a challenging task?

LESSON – 23

I. Choose the best answer

1. Which software is used to create animation ?
a) Paint b) PDF c) MS Word d) Scratch
2. All files are stored in the _____
a) Folder b) box c) Pai d) scanner
3. Which is used to build scripts?
a) Script area b) Block palette c) stage d) sprite
4. Which is used to edit programs?
a) Inkscape b) script editor c) stage d) sprite
5. Where you will create category of blocks?
a) Block palette b) Block menu c) Script area d) sprite

II. Match the Following

1. Script Area	Type notes
2. Folder	Animation software
3. Scratch	Edit programs
4. Costume editor	Store files
5. Notepad	Build Scripts

III. Answer the following

1. What is Scratch?
2. Write a short note on editor and its types?

1. LAWS OF MOTION

1) Define inertia. Give its classification.

- External Unbalanced force
- 3 Types of inertia.
  - a) Inertia of rest
  - b) Inertia of motion
  - c) Inertia of direction

2) Classify the types of force based on their application.

- Like parallel force
- Unlike parallel force

3) Differentiate Mass and weight.

S. No	Mass	Weight
1.	Scalar quantity	Vector quantity
2.	unit is Kilogram	unit is Newton
3.	Quantity of matter	Gravitational force

4) Define moment of couple.

- Rotating effect of a couple
- $M = F \times S$
- Ex: Turning a tap

5) State the principle of moments.

- Like or unlike parallel force
- Moment in clockwise direction } = Moment in anticlockwise direction

$$F_1 \times d_1 = F_2 \times d_2$$

6) State Newton's second law.

$$F = m \times a$$

7) Why a spanner with a long handle is preferred to tighten screws in heavy vehicles?

- Spanner is long, need less force

- Moment of force = F x d

8) While catching a cricket ball the fielder lowe his hands backwards. why?

- Time increases, momentum decreases
- $\text{Force} = \frac{\text{Momentum}}{\text{Time}}$

9) How does an astronaut float in space shuttle?

- Huge orbital velocity
- Free fall condition.

2. OPTICS

1) What is refractive index?

Ratio of speed of light in vaccum to speed of light in medium

$$\mu = \frac{\sin i}{\sin r}$$

2) State Snell's law.

Ratio of Sine of angle of incidence and sine of angle of refraction is equal to Refractive indices

$$\frac{\sin i}{\sin r} = \frac{\mu_2}{\mu_1}$$

3) Differentiate convex lens and concave lens.

S. NO	Convex lens	Concave lens
1.	Hypermetropia	myopia
2.	Real image	Virtual image
3.	Thicker in middle	Thinner in middle
4.	Converging lens	diverging lens

4) State Rayleigh's law of scattering.

Scattering is inversely proportional to the fourth Power of wavelength.

$$S \propto \frac{1}{\lambda^4}$$

5) What are the causes of 'Myopia' ?

- Lengthening of eye ball.
- Focal length reduced
- Retina increased
- Distance object cannot seen clearly.

6) Why does the sky appear in blue colour?

✓ Blue colour is scattered

7) Why are traffic signals red in colour?

- Red light – highest wavelength.

3. Thermal physics

1) Define one calorie.

1 gram of water 1°C.

2) State Boyle's law.

Constant Temperature,

$$P \propto \frac{1}{V}$$

3) State law of volume. (or) State charless law

Constant pressure,

$$V \propto T$$

4) Distinguish between ideal gas and real gas.

S. No.	Ideal Gases	Real Gases
1.	Atoms or molecules do not interact	Atoms or molecules interact
2.	Weak Force	Lack Force

4. Electricity

1) Define the unit of current.

- SI unit ampere (A)
- $1 \text{ ampere} = \frac{1 \text{ coulomb}}{1 \text{ second}}$

2) What happens to the resistance, as the conductor is made thicker?

- Resistance decreases.

3) Why is tungsten metal used in bulbs, but donot in fuse wires?

⇒ Very high melting point

4) What is the role of the earth wire in domestic circuits?

- Save electric shocks
- Send current to the earth.

5) State Ohm's law.

Constant Temperature,

$V = IR$

6) What connection is used in domestic appliances and why?

Parallel connection

5. Acoustics

1) What is the audible range of frequency.

20 Hz to 20,000 Hz

2) What is the minimum distance needed for an echo?

17.2 m

3) Name three animals, which can hear Ultrasonic Vibrations.

Mosquito, dog, bats

4) Why does sound travel faster on a rainy day than on a dry day?

Humidity increases sound increases

5) Why does an empty vessel produce more sound than a filled one?

more free space

6) Explain why, the ceilings of concert halls are curved?

Multiple reflections

7) Mention two cases in which there is no Doppler effect in sound?

- Source and Listener are rest
- Perpenticular

8) A sound wave has a frequency of 200 Hz and a speed of 400 ms^{-1} in a medium. Find the wave length of sound wave?

$\lambda = 2m$

6. Nuclear physics

1) Who is discovered natural radioactivity?

Henri Becquerel

2) What is average energy released from a single fission process?

$3.2 \times 10^{-11} J$

3) What is the amount of radiation that may cause death of a person when exposed to it?

600R

4) Give the SI unit of radioactivity.

Becquerel

5) Which hazardous radiation is the cause for the genetic disease?

Gamma radiation.

6) Write any three features of natural and artificial radioactivity.

S. No.	Natural radioactivity	Artificial radioactivity
1.	Cannot be controlled	can be controlled
2.	Atomic no more than 83	Less than 83.
3.	Alpha, Beta, gamma radiations	Nentron, positron
4.	Spantaneous process	Induced process.

7) Define one roentgen.

Constant Temperature, Pressure

8) State Soddy and Fajan's displacement law.

- Alpha particle
- Atomic number less by 2 unit
- Mass number less by 4 unit

9) In japan, some of the new born children are having Congenital diseases. Why?

- World war II
- Disability
- Down syndrome
- Heart disease

10) Give any two uses of radio isotopes in the field of agriculture?

- P-32 ⇒ Increase the crop production
- Kill insects and parasites.

7. Atoms and Molecules

1) write the different types of isotopes of oxygen and its percentage abundance.

	Isotopes	% abundance
1.	$_8O^{16}$	99.757
2.	$_8O^{17}$	0.038
3	$_8O^{18}$	0.205

2) Define: Atomicity

The number of atoms present in the molecule

3) Give any two examples for heterodiatomic molecules.

*. HCl

* CO

4) What is molar volume of gas?

one mole gas - 22.4 litre

5) Find the percentage of nitrogen in ammonia.

82.35%

8. Periodic classification of elements

1) 'A' is a silvery white metal. 'A' combines with O_2 to form 'B' at 800°C, the alloy of 'A' is used in making the aircraft. Find A and B.

A - Aluminium

B - Aluminium oxide

2) What is rust? Give the equation for formation of rust.

- Moist air
- Hydrated Ferric oxide
- $Fe_2O_3 \cdot xH_2O$

3) State two conditions necessory for rusting of iron.

- ✓ Moist air
- ✓ Presence of oxygen
- ✓ Presence of water

9. Solutions

1) Define the term : Solution

It is

- Homogeneous mixture
- lesser amount Solute
- larger amount Solvent

2) What is meant by binary solution?

- Two components
- One solute, one solvent
- Ex: Sodium chloride in water

3) Define volume percentage.

* Volume percentage = $\frac{\text{Volume of the solute}}{\text{Volume of the solution}} \times 100$

* Volume percentage = $\frac{\text{Volume of the solute}}{\text{Volume of the solute} + \text{Volume of the solvent}} \times 100$

4) The aquatic animals live more in cold region. why?

- Solubility of oxygen is more

5) Define Hydrated salt.

- Number of molecules of water
- water of crystallisation.
- Ex: Blue vitriol – $CuSO_4 \cdot 5H_2O$

6) A hot saturated solution of copper sulphate forms crystals as it cools. why?

- Five water molecules loses.
- water of crystallisation.

10. Types of Chemical Reactions

1) Define combination reaction. Give one example for an exothermic combination reaction.

- Two or more reactant combine to form Compound.
- Ex: $C + O_2 \longrightarrow CO_2$

2) Differentiate reversible and irreversible reactions.

S. No	Reversible reaction	Irreversible reaction
1.	Slow	fast
2.	attain equillibrium	Not equillibrium
3.	reversed	not reversed

11. Carbon And Its Compounds

1) write the uses of ethanoic acid.

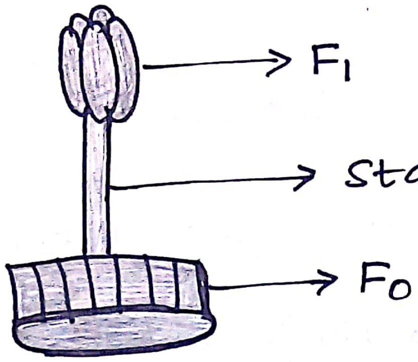
- Making Plastic
- Making paint, dyes
- Making medicines
- Making rubber
- In printing on fabrics.
- Lab reagent.

2) what is called TFM?

TOTAL FATTY MATTER

12. Plant Anatomy And Plant physiology

1) Draw and label the structure of Oxysomes.



2) Name the three basic tissue systems in flowering plants.

- Dermal or Epidermal tissue system
- Ground tissue system
- Vascular tissue system

3) what is photosynthesis and where in a cell does it occur?

$$6CO_2 + 12H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light}} C_6H_{12}O_6 + 6H_2O + 6O_2\uparrow$$

4) what is respiratory quotient?

$$RQ = \frac{\text{Volume of } CO_2 \text{ liberated}}{\text{Volume of } O_2 \text{ consumed}}$$

5) write the reaction for photosynthesis?

$$6\,CO_2 + 12\,H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light}} C_6H_{12}O_6 + 6H_2O + 6O_2\uparrow$$

13. Structural Organisation of Animals

1) Give the common name of the Hirudinaria granulosa.

Indian cattle leech.

2) write the dental formula of rabbit.

$I\ \frac{2}{3}\ ,\ C\ \frac{0}{0}\ ,\ PM\ \frac{3}{2}\ ,\ M\ \frac{3}{3}$

$\frac{2033}{1023}$

3) why are the rings of cartilages found in trachea of rabbit?

- Free passage of air

4) List out the parasitic adaptations in leech.

⇒ Pharynx
⇒ Crop
⇒ Y-shaped wound
⇒ Hirudin
⇒ Continuous supply bbod.
⇒ Anterior and posterior ends

5) How does locomotion takes place in leech?

- Looping movement
- Swimming movement

14. Transportation in plants And circulation in Animals

1) Name two layered protective covering of human heart.

Pericardium

2) Why is the colour of the blood red?

Haemoglobin

3) What is cohesion?

The Force of attraction between molecules of water

4) Why is the circulation in man referred to as double circulation?

One complete cycle - twice.

5) What are heart sound? How are they produced?

'LUBB' 'DUPP'

6) Who is discovered Rh factor? why was it named so?

- Rhesus monkey

7) What is the importance of valves in the heart?

⇒ Prevent back flow of blood.

8) How are arteries and veins structurally different from one another?

S.No	Arteries	Veins
1.	Pink colour	Red colour
2.	Deep location	superficial location
3.	Distributing Vessel	collecting vessel
4.	Strong, thick and Elastic	weak, thin, non-elastic

15. Nervous System

1) Define stimulus.

- changes in the environmental condition.

2) Name the parts of the hind brain.

⇒ Cerebellum
⇒ Pons
⇒ Medulla oblongata

3) What are the structures involved in the protection of brain?

- Duramater
- Piamater
- Arachnoid membrane

4) which acts as a link between the nervous system and endocrine system?

- Hypothalamus

5) Define reflex arc.

⇒ Path way

⇒ Nerve impulse

16. Plant And Animal Hormones

1) write the name of a synthetic auxin.

2,4-D

2) What is the hormone responsible for the secretion of milk in female after child birth?

Prolactin

3) which hormone is secreted during emergency situation in man?

- Epi nephrine
- Nor epi nephrine

4) what are synthetic auxins? Give examples.

- Artificially synthesized
- Eg:- 2,4-D

5) What is bolting? How can it be induced artificially?

⇒ Sudden shoot elongation

6) What is the role of parathormone?

- Regulate calcium, phosphorous metabolism
- Maintain blood calcium levels.

7) Why are thyroid hormones reffered as personality hormone?

→ Controls growth of body
→ Bone formation
→ Physical, mental, personality development

8) Which hormone requires iodine for its formation? what will happen if intake of iodine in our diet is low?

Thyroid hormone.

17. Reproduction in Plants And Animals

1) Mention the function of endosperm.

- Provide food

2) Name the hormone responsible for the vigorous Contractions of the uterine muscles.

⇒ oxytoxin

3) What is the enzyme present in acrosome of sperm?

- Hyaluronidase

4) Define triple fusion.

Secondary nucleus.

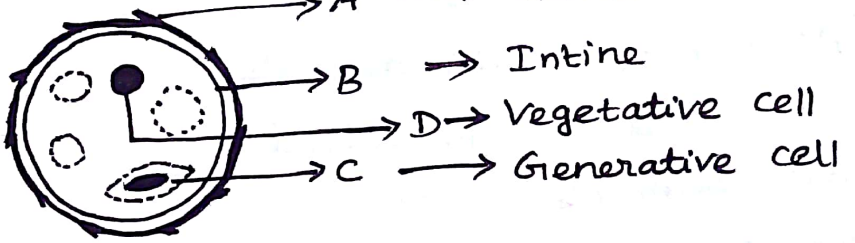
5) What is colostrum? How is milk production hormonally regulated?

- Milk produced first 2 to 3 days
- After child birth
- Prolactin – anterior pituitary
- Oxytoxin – Posterior pituitary

6) How does developing embryo gets its nourishment inside the mother's body?

→ Placenta
→ Exchange of food materials
→ diffusion of oxygen.

7) Identify the parts A, B, C and D.



18. Heredity

1) A garden pea plant produces axial white flowers. Another of the same species produced terminal Violet flowers. Identify the dominant trait?

1. Axial white flower – Dominant
2. Terminal violet flower – Recessive

2) Name the bond which binds the nucleotides in a DNA?

Hydrogen bond.

3) What do you understand by the term phenotype and genotype?

Phenotype :-

External expression

Genotype :-

Genetic expression

4) What are allosomes?

- Determining the sex.
- Sex chromosomes or hetero chromosomes
- 23rd chromosome

5) What are Okazaki fragments?

⇒ Replication of a DNA molecule
⇒ New strand
⇒ Short segments
⇒ DNA Ligase

6) Explain the structure of chromosomes.

- Thin, long, thread like structures
- Centromere
- Chromomere
- DNA, RNA, Chromosal proteins
- Metallic ions.

19. Origin And Evolution Of Life

1) Which organism is considered to be the fossil bird?

Archaeopteryx

2) Why is Archaeopteryx considered to be a connecting link?

- Wings with feathers
- long tail, conical teeth, reptile
- link between reptiles and birds.

3) How can you determine the age of the fossils fuel?

- Determined by radioactive elements
- Carbon, Uranium, lead or potassium
- Radio active carbon [C^{14}] dating method.

20. Breeding And Bio-Technology

1) Give the name of wheat variety having higher dietry fibre and protein.

Triticale

2) Define genetic engineering.

- Transfer of genes from one organism to another organisms
- Create new DNA.

3) What are transgenic organisms?

Modified gene or foreign gene

4) Name two maize hybrids rich in amino acid lysine.

- Protina
- Shakti

5) Distinguish between ⓐ Somatic gene theraphy and Germline gene theraphy.

S. No.	Somatic gene theraphy	Germ line gene therapy
1.	Somatic cell	Germ cell
2.	Body cell	egg and sperm.

ⓑ undifferentiated cells and differentiated cells.

S. No.	Undifferentiated cells	differentiated cells
1.	Variable potency	Specific functions
2.	Ex: Umbilical cord	Ex: Pancrease secrete insulin

6) State the applications of DNA fingerprinting Technique.

- Forensic applications
- Paternity testing
- Population
- evoluation

21. Health And Disease

1) Mention the diseases caused by tobacco smoke.

- Lungs and oral cancer
- Heart diseases
- Tuberclosis
- Gastric ulcer
- Bronchitis
- Emphysema

2) What are the contributing factors for obesity?

* Genetic factors
* Eating habits
* Physical inactivity
* Endocrine factors.

3) What is metastasis?

* The cells migrate to distant parts of the body.

4) How does insulin deficiency occur?

- Destruction of β-cells in the pancrease

5) What are the various routes by which transmission of human immuno deficiency virus takes place?

* Sexual contact
* Contaminated needles
* contaminated blood
* Infected mother to child

6) How is a cancer cell different from a normal cell?

S. No	Cancer cell	Normal cell
1.	Abnormal cell growth	Normal cell growth
2.	Uncontrolled division	Controlled division
3.	Not respond normal cell division.	Respond cell division.

7) Differentiate between Type-1 and Type-2 Diabetes mellitus.

S. No	Factors	Type-1 Insulin	Type-1 non-Insulin
1.	Body weight	Normal or underweight	obese
2.	Defect	β - cell	Target cells
3.	Age	below 20 years	After 30 years
4.	Prevalence	10 - 20 %	80 - 90 %
5.	Treatment	Need insulin	Diet, exercise, medicine

8) What precautions can be taken for preventing heart diseases?

- Take low calorie food,
- Low saturated fat
- Low carbohydrate
- Low common salt
- Diet rich PUFA
- Take fibre, fruits, vegetables, proteins, minerals and vitamins.

22. Environmental Management

1) What is the importance of rainwater harvesting?

- Increase ground water levels.
- Increase demand of water.
- Reduce flood and soil erosion
- Drinking purpose.

2) What are advantages of using biogas?

⇒ less pollution

⇒ Bio-waste and sewage material

⇒ Rich in nitrogen and phosphorous

⇒ Safe and convenient

⇒ Reduce green house gases.

3) What are the consequences of deforestation?

- Floods
- soil erosion
- Loss of Wild life
- Changes climate condition
- Imbalance of bio-geo chemical cycles.
- Drought
- Desertification

4) List any three activities based on 3R approach to conserve natural resources.

⇒ Reduce

⇒ Reuse

⇒ Recycle

23. Visual Communication

1) What is scratch?

- To create animation, cartoons, games easily.
- Visual programming language
- Programming easier.

2) Write a short note on editor and its types.

Three parts of editor :-

a) Stage

b) Sprite

c) Script

a) Stage :-

- It is the background
- Open the scratch window
- Background is mostly white colour
- we can changes the background colour.

b) Sprite :-

- ✓ characters on the background
- ✓ Cat appears as a sprite
- ✓ To make alternation in sprite

c) Script :-

- Edit your programs
- Edit your Sprite's pictures.

3) What is Stage?

* It is the background
* Open the scratch window
* Background is mostly white colour.
* We can changes the background colour.

4) What is sprite?

- ✓ characters on the background
- ✓ Cat appears as a sprite
- ✓ To make alternation in sprite.

...Best of Luck...

1. Laws of Motion

1) what are the types of inertia? Give an example for each type.

- External unbalanced force
- Three types of inertia.
  - i) Inertia of rest
  - ii) Inertia of motion
  - iii) Inertia of direction

2) State Newton's laws of motion?

i) Newton's First law

ii) Newton's Second law

iii) Newton's third law

"For every action there is an equal and opposite reaction"

3) Deduce the equation of a force using Newton's second law of motion?

$$F = m \times a$$

Force = mass x acceleration

4) State and prove the law of conservation of linear momentum.

$$F_A = -F_B$$

$$m_1 v_1 + m_2 v_2 = m_1 u_1 + m_2 u_2$$

5) Describe rocket propulsion.

- Law of conservation of linear momentum, Newton's second law of motion.
- Fuel
- Hot gas is ejected
- equal and opposite reaction, combustion chamber
- Increase velocity
- Escape velocity

6) State the universal law of gravitation and derive its mathematical expression.

$$F \propto \frac{m_1 m_2}{r^2}$$

$$F = \frac{G m_1 m_2}{r^2}$$

'G' is universal gravitational constant.

7) Give the applications of universal law of gravitation.

- Dimension of the bodies
- Discover stars and planets
- "Wobble"
- Mass of the stars can be calculated
- Germination of roots
- Path of Astronomical bodies.

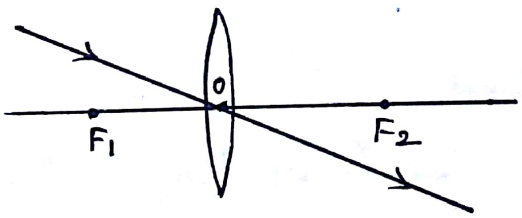
2. Optics

1) List any five properties of light.

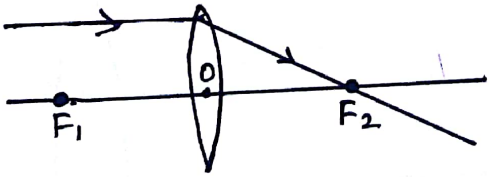
- Light is a form of energy.
- Travels straight line.
- No need any medium.
- $c = 3 \times 10^8 \, m s^{-1}$
- Different colour light - different wavelength and frequency
- Violet light - lowest wavelength
  Red light - highest wavelength

2) Explain the rules obtaining images formed by a convex lens with help of ray diagram.

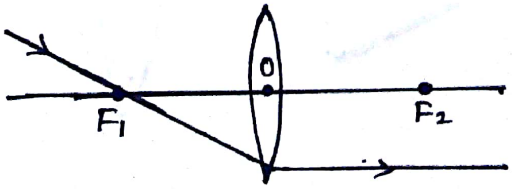
- Rule-1



- Rule -2



- Rule -3

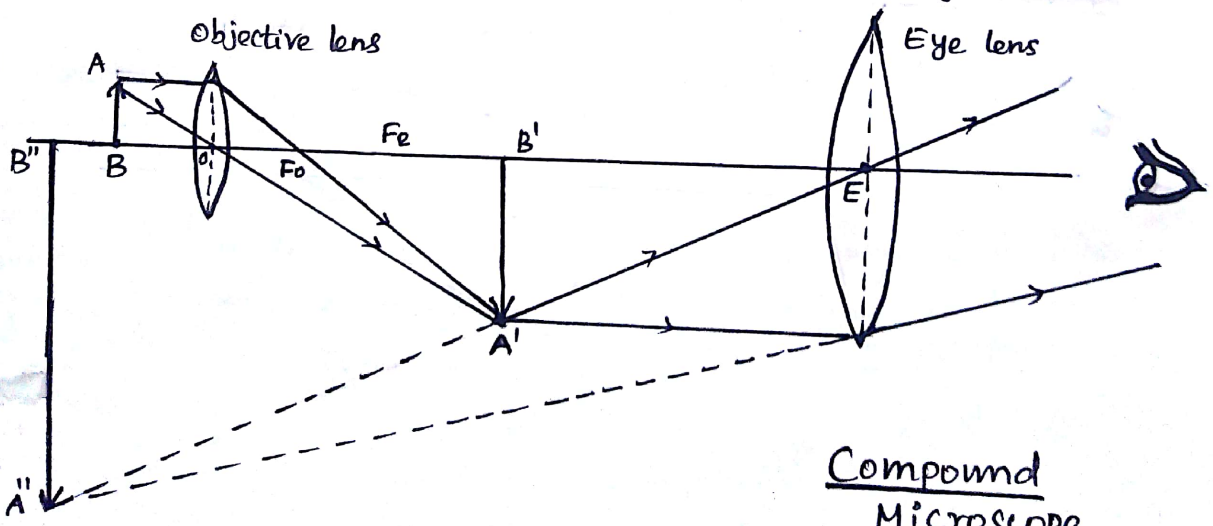


3) Differentiate the eye defects: Myopia and Hypermetropia.

S. No.	Myopia	Hypermetropia
1.	Short sightedness	long sightedness
2.	Concave lens	Convex lens
3.	Lengthening eye ball.	shortening eye ball
4.	Before retina	Behind retina
5.	Distance object cannot be seen clearly.	Nearby object cannot be seen clearly.
6.	Retina increase	Retina decrease.
7.	Far point Closer	Near point further.

4) Explain the construction and working of a "Compound Microscope".

- Two convex lens used
- objective lens - shorter focal length
  eye lens - Longer focal length



Compound Microscope

3. Thermal physics

1) Derive the ideal gas equation.

- Boyle's law

$$PV = \text{Constant}$$

- Charless law

$$\frac{V}{T} = \text{constant}$$

- Avogadro's law

$$\frac{V}{n} = \text{constant}$$

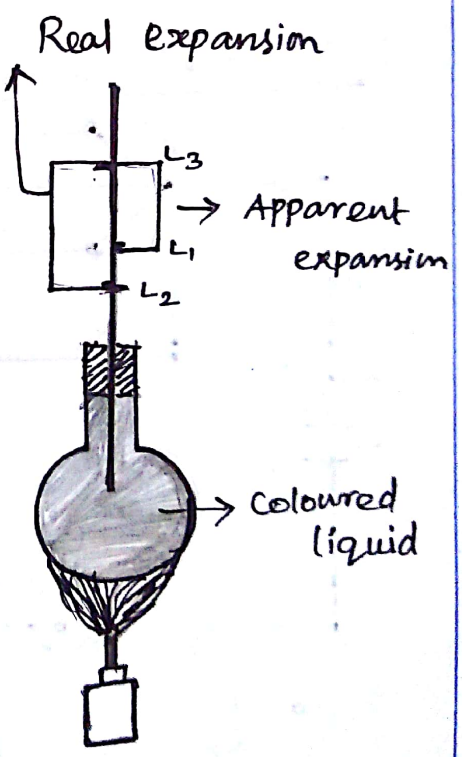
$$\boxed{PV = RT}$$

2) Explain the experiment of measuring the real and apparent expansion of a liquid with a neat diagram.

- Apparent expansion = $L_3 - L_1$
- Real expansion = $L_3 - L_2$

Result :-

Real expansion is more than Apparent expansion.

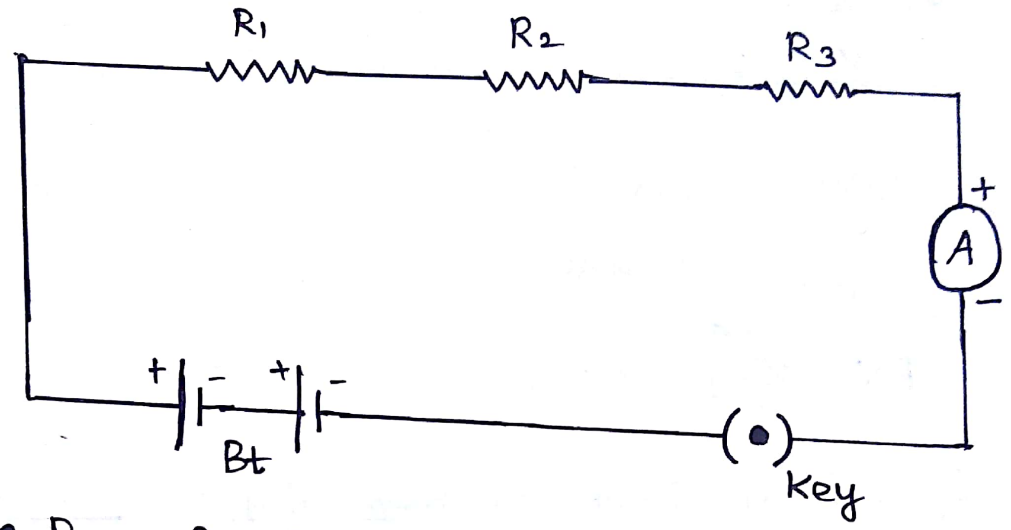


Real and Apparent Expansion of Liquid

4. Electricity

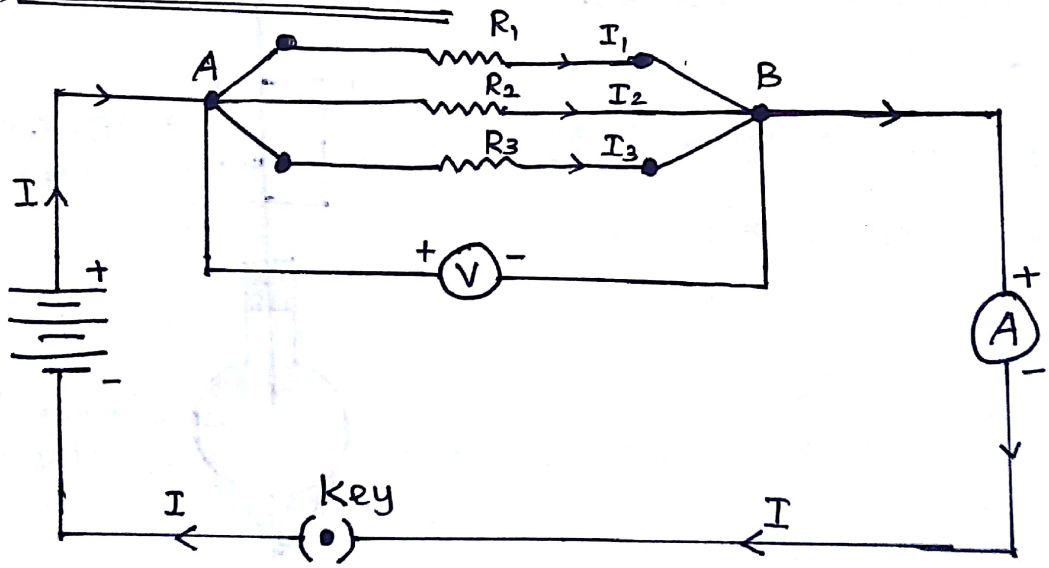
1) With the help of circuit diagram derive the formula for the resultant resistance of three resistance connected.

a) Series circuit :-



- $R_S = R_1 + R_2 + R_3$
- $\boxed{R_S = nR}$

b) Parallel circuit :-



- $\frac{1}{R_P} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$
- $\boxed{R_P = \frac{R}{n}}$

2) (a) What are the advantages of LED Tv over the normal TV?

- Brighter picture
- Thinner size
- less power
- life span
- more reliable

(b) List the merits of LED bulb.

⇒ No loss of energy.

⇒ Need low power

⇒ Different colour light

⇒ Low cost

⇒ Not harmful to environment.

5. ACOUSTICS

1) What are the factors that affect the speed of sound in gases?

- Effect of density
- Effect of temperature
- Effect of relative humidity.

i) Effect of density :-

$$V \propto \sqrt{\frac{1}{d}}$$

ii) Effect of temperature :-

$$V \propto \sqrt{T}$$

iii) Effect of relative humidity :-

Humidity increases with speed of sound increases.

2) (a) What do you understand by the term "Ultrasonic vibration"?

Greater than 20 KHz.

(b) State three uses of ultrasonic vibrations.

- Tracking a satellite
- RADAR
- SONAR

(c) Name three animals which can hear Ultrasonic vibrations.

- Dogs
- Bats
- Mosquito

3) What is an echo?

- Reflection of the original sound.
- Ex: Walls, mountains

(a) State two conditions necessory for hearing an echo.

$$\text{Velocity} = \frac{\text{distance}}{\text{time}}$$

(b) What are the medical applications of echo?

- Ultrasonography.
- Not use harmful radiations.

(c) How can you calculate the speed of sound using echo?

$$\text{Speed of sound} = \frac{\text{distance}}{\text{time}}$$

6. Nuclear Physics

1) Compare the properties of alpha, beta, gamma radiations

S. No	Properties	α rays	β rays	γ rays
1.	Definition	Helium nucleus	electrons	photons
2.	Charge	Positive charge	Negative charge	Neutral
3.	Ionising Power	100 times greater – β rays 10,000 times greater – γ rays	low	very less
4.	Speed	$\frac{1}{10}$ to $\frac{1}{20}$ times	upto $\frac{9}{10}$ times	Speed of light.
5.	Penetrating Power	Low	high	very high
6.	Electric and Magnetic field	Both	Both	not both

2) What is nuclear reactor? Explain its essential parts with their functions.

(i) Nuclear reactor:

- Nuclear fission
- Self sustained
- Controlled manner

(ii) Essential parts and functions:-

⇒ Fuel:-

- Fissile material used
- Uranium used

⇒ Moderator:-

- Slow down the high energy neutrons
- Graphite, heavy water

⇒ Control rod:-

- Sustained chain reaction
- Boron or cadmium rods used
- Absorbs neutrons

⇒ Coolant:-

- Remove heat
- Produce steam
- Run turbine – Produce electricity
- Ex: water, air, helium

⇒ Protection wall:

- lead wall – Prevent harmful radiations

7. Atoms and Molecules

1) Give the salient features of "Modern atomic theory".

- Atom is a no longer indivisible
- The mass of atom can be converted into energy.
  $E = mc^2$
- Atom is a smallest particle takes part in chemical reaction.
- Same element → different atomic mass.
  Ex: Isotopes ${}_{17}Cl^{35}$, ${}_{17}Cl^{37}$
- Different element, same atomic mass.
  Ex: Isobars ${}_{18}Ar^{40}$, ${}_{20}Ca^{40}$
- Artificial transmutation.

2) Derive the relationship between Relative molecular mass and vapour density?

Relative molecular mass = 2 × Vapour density

3) Calcium carbonate is decomposed on heating in the following reaction. $CaCO_3 \longrightarrow CaO + CO_2$.

Answer: $CaCO_3 \xrightarrow{\Delta} CaO + CO_2$

(i) How many moles of calcium carbonate are involved in this reaction?

Ans: 1 mole

(ii) Calculate the gram molecular mass of calcium carbonate involved in this reaction.

Ans: 100 g/mole

(iii) How many moles of CO_2 are there in this equation?

Ans: 1 mole of CO_2

4) How many grams are there in the following?

(i) 2 moles of hydrogen molecule, H_2

Ans: mass = 4g

(ii) 3 moles of chlorine molecule, Cl

Ans: Mass = 213g

(iii) 5 moles of sulphur molecule, S_8

Ans: Mass = 1280g

(iv) 4 moles of phosphorous molecule, P_4

Ans: Mass = 496g

8. Periodic classification of elements

1) Explain smelting process.

- Reducing roasted metallic oxide from metal.

Blast Furnace :-

⇒ roasted ore : coke : limestone

8 : 4 : 1

⇒ Three regions

a) Lower region :

1500°C

b) Middle region :-

1000°C

c) Upper region :-

400°C

9. Solutions

1) Write notes on.

i) Saturated solution ii) Unsaturated solution.

i) Saturated solution :-

- No more solute
- Ex: 36g Nacl in 100g of water

ii) Unsaturated solution :-

- less solute
- Ex: 10g Nacl in 100g of water

2) write notes on various factors affecting solubility

- ✓ Nature of the solute and solvent
- ✓ Effect of Temperature
- ✓ Effect of pressure

3)a) What happens when $MgSO_4 \cdot 7H_2O$ is heated? write the appropriate equation.

b) Define solubility.

Ans:

a) $MgSO_4 \cdot 7H_2O \underset{\text{Cooling}}{\overset{\text{Heating}}{\rightleftharpoons}} MgSO_4 + 7H_2O$

b) Solubility :-

$$\text{Solubility} = \frac{\text{Mass of the solute}}{\text{Mass of the solvent}} \times 100$$

4) In what way hygroscopic substances differ from deliquescent substances.

S. No.	Hygroscopic	Deliquecent
1.	Absorb moisture, do not dissolve	Absorb moisture; dissolve
2.	Ex: Quick lime, Silica gel	Ex: Caustic soda, Caustic potash
3.	Do not change physical state	Change physical state
4.	Amorphous solids or liquids	Crystalline solids
5.	Used as drying agent.	Saturated solution forming

5) A solution is prepared by dissolving 45 g of sugar in 180 g of water. Calculate the mass percentage of solute.

Ans: Mass of solute = 45 g

Mass of solvent = 180 g

$$\text{Mass percentage of Solute} = \frac{\text{Mass of the solute}}{\text{Mass of the Solute} + \text{Mass of the solvent}} \times 100$$

$$= \frac{45}{45+180} \times 100$$

$$= \frac{45}{225} \times 100 = \frac{4500}{225}$$

Mass percentage of solute = **20%**

6) 'A' is a blue coloured crystalline salt. On heating it loses blue colour and to give 'B'. when water is added, 'B' gives back to 'A'. Identify A and B, write the equation

⇒ A – Copper sulphate Pehtahydrate

⇒ B – Anhydrous Copper sulphate

$$CuSO_4 \cdot 5H_2O \underset{\text{cooling}}{\overset{\text{Heating}}{\rightleftharpoons}} CuSO_4 + 5H_2O$$

10. Types of Chemical Reactions

1) Explain the factors influencing the rate of a reaction.

- Nature of the reactants
- Concentration of the reactants
- Temperature
- Pressure
- Catalyst
- Surface area of reactants.

2) How does pH play an important role in everyday life?

⇒ pH of body – 7.0 to 7.8

⇒ pH of blood – 7.35 to 7.45

⇒ pH of ideal blood – 7.4

⇒ pH of saliva – 6.5 to 7.5

⇒ pH of stomach – 2.0

⇒ pH of water – 7

⇒ pH of soil – Acidic, Basic, Neutral

3) What is a chemical equilibrium? what are its Characteristics?

Rate of forward reaction = Rate of backward reaction

Characters:

- Rate of forward reaction and backward reaction same
- Pressure, colour, density are un changed with time.
- It is a dynamic equilibrium.

11. Carbon And its Compounds

1) What is called homologous series? Give any three of its characteristics?

- Same general formula, similar chemical properties
- Differ by $-CH_2$ group.
- Ex: Methane – CH_4
  Ethane – CH_3-CH_3
  Propane – $CH_3-CH_2-CH_3$

Characters :-

- ✓ Same element and same functional group.
- ✓ General molecular formula.
  Ex: Alkanes – C_nH_{2n+2}
- ✓ Chemical properties similar.
- ✓ Prepared by common method.

2) Arrive at, systematically, the IUPAC name of the Compound. $CH_3-CH_2-CH_2-OH$.

Ans: Propan-1-ol

3) How is ethanol manufactured from sugarcane?

- Molasses – dark colour liquid, 30% sucrose
- Dilution of molasses
- Addition of nitrogen
- Addition of Yeast
- Washing – Absolute Alcohol (100%)

4) Differentiate soaps and detergents.

S. No	Soap	Detergent
1.	Sodium salt of long chain fatty acids.	Sodium salt of Sulphonic acids.
2.	Bio-degradable	Non-biodegradable
3.	Poor foaming	Rich foaming
4.	Scum in hard water	Not scum in hard water
5.	Prepared from animal fat or vegetable oil	hydrocarbons - crude oil

12. Plant Anatomy And Plant physiology

D) Differentiate the following :-

a) Monocot root and Dicot root

S. No.	Tissues	Monocot root	Dicot root
1.	Number of xylem	Polyarch	Tetrarch
2.	Cambium	Absent	present
3.	Secondary growth	Absent	Present
4.	Pith	Present	Absent
5.	Conjunctive tissue	Made up of Sclerenchyma	Made up of Parenchyma

b) Aerobic and Anaerobic respiration

S. No	Aerobic respiration	Anaerobic respiration
1.	With help of oxygen	Without oxygen
2.	Food is oxidized with O_2 into carbon-di-Oxide, Water, energy	Glucose is converted into ethanol.
3.	$C_6H_{12}O_6 + O_2 \longrightarrow 6CO_2 + 6H_2O + ATP$	$C_6H_{12}O_6 \longrightarrow 2CO_2 + 2C_2H_5OH + Energy$

2) Describe and name three stages of cellular respiration that aerobic organisms use to obtain energy from glucose.

- Glycolysis
- Krebs cycle
- Electron transport chain

3) How does the light dependent reaction differ from the light independent reaction? what are the end Products and reactants in each? Where does each reaction occur within the chloroplast?

(a) Difference between Light dependent and Light independent reactions.

S. No.	Light dependent Reaction	Light independent reaction
1.	Require sunlight	Not require sun light.
2.	Thylakoid membrane.	Stroma
3.	ATP and $NADPH_2$	Glucose

b) Reactants and End products

	Reactants	End products
Light dependent	light, water Chlorophyll	ATP, $NADPH_2$, O_2, H_2O
Light independent	CO_2, ATP, $NADPH_2$	Glucose

c) Place of occurence :-

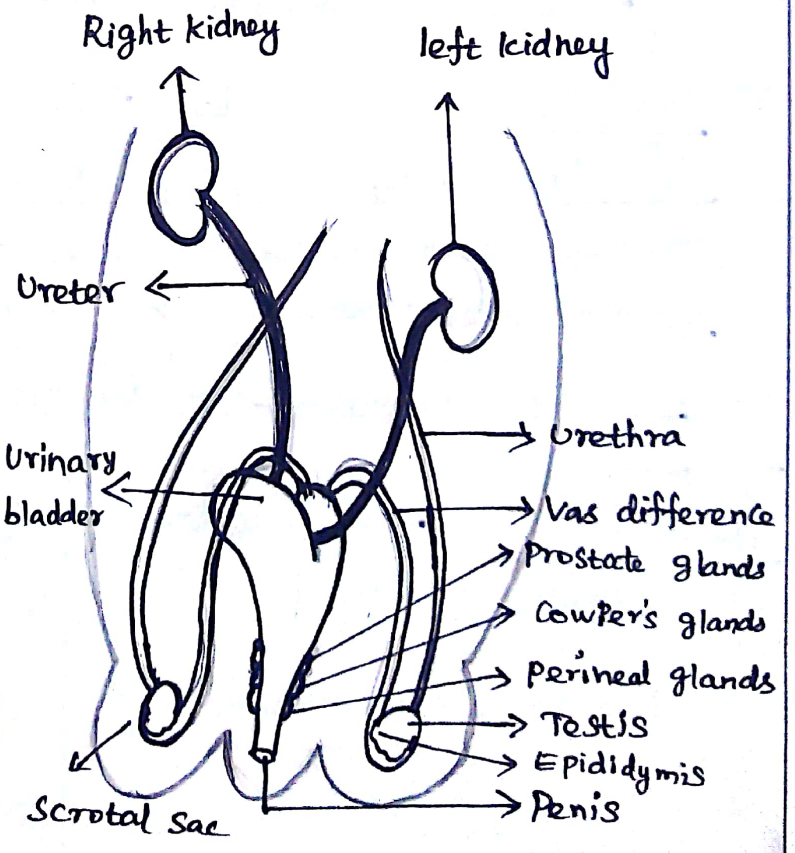
Light dependent :- Thylakoid membrane

Light independent :- Stroma

13. Structural Organisation of Animals

1) Explain male reproductive system of rabbit with a labelled diagram.

- Pair of tests
- Ovoid shape
- Scrotal sacs
- Seminiferous tubes
- epididymis
- Vas deferens
- Urinary bladder
- Three glands
  1. Prostate gland
  2. Cowper's gland
  3. Perineal gland



Male Reproductive system of Rabbit

14. Transportation in Plants and Circulation in Animals

1) What is transpiration? Give the importance of transpiration.

- Evaporation of water through stomata in plants

Importance of Transpiration :-

- ✓ Transpiration pull
- ✓ Supplies water
- ✓ Minerals
- ✓ Cool the surface
- ✓ maintain shape

2) Why are leucocytes classified as granulocytes and agranulocytes? Name each cell and mention its functions.

White blood cell :-

Presence of granules in cytoplasm.

Two types : 1. Granulocytes
2. Agranulocytes

1. Granulocytes :- → Neutrophils, Eosinophils, Basophils

2. Agranulocytes → Lymphocytes, Monocytes

3) Enumerate the functions of blood.

- Transport of respiratory gases
- Transport of digested food

- Transport of hormones
- Transport of nitrogen products
- Maintains water balance
- Maintains pH and body temperature
- Protection of the body.

15. Nervous system

1) a) Differentiate Voluntary and involuntary actions

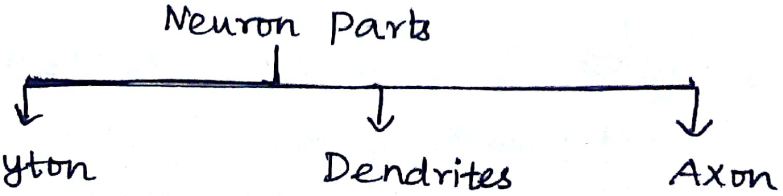
S. No.	Voluntary actions	Involuntary actions
1.	Own conscious	not own conscious
2.	Cerebral cortex, Cerebellum	Hyphothalamus

b) Differentiate Medullated and non-medullated nerve fibre.

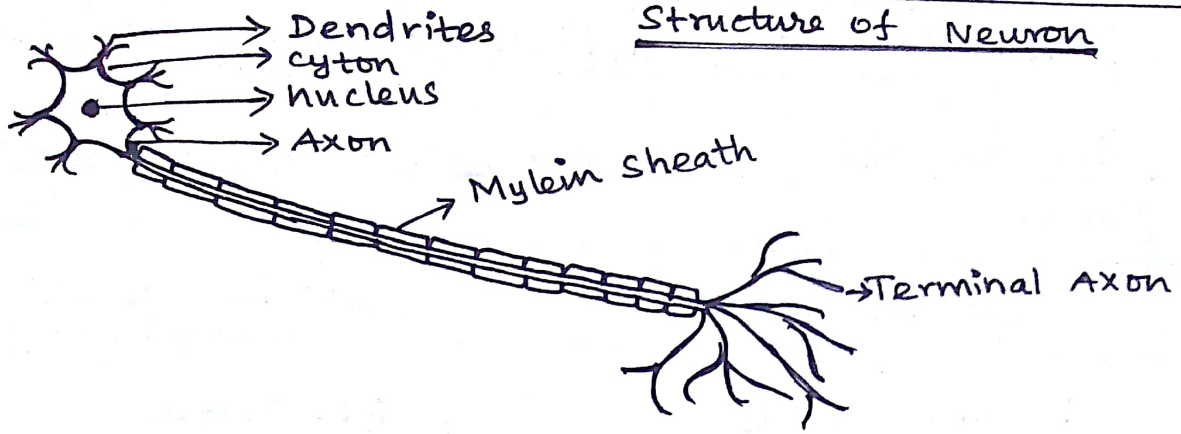
S. No.	Medullated Nerve fibre	Non-medullated Nerve fibre
1.	Covered myelin sheath	Not covered mylein sheath
2.	Forms white matter	Gray matter

2) With a neat labelled diagram explain the structure of a neuron.

- Neuron is the structural and functional unit of Nervous System.
-



Structure of Neuron



3) Illustrate the structure and functions of brain.

S. No.	Major parts	Sub divisions	Functions.
1.	Fore brain	• Cerebrum	Thinking, memory, imageing, reasoning
		• Thalamus	Sensory and Motar Signalling
		• Hypothalamus	Controls hunger, thirst
2.	Mid brain	Corpora quadrigemina	Control visual and Auditory
3.	Hind brain	• Cerebellum	Posture and balance
		• Pons	Respiration and sleep
		• Medulla oblongata	Cardio vascular, digestive control

16. Plant And Animal Hormones

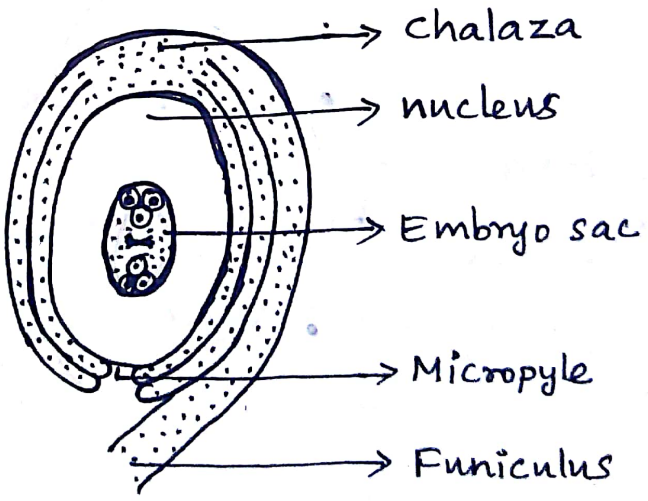
1) Write the difference between endocrine and exocrine gland.

S. No	Endocrine gland	Exocrine gland
1.	Ductless glands	Specific glands
2.	Secrets hormones	Secrets saliva, sweat
3.	Ex: Pituitary gland Thyroid gland	Ex: Salivary gland, Sweat gland
4.	Secretions into the blood stream.	Secretions passed through the specific ducts.

17. Reproduction In Plants and Animals

1) With a neat labelled diagram describe the parts of a typical angiospermic ovule.

- Nucleus - main part
- Micropyle
- Funiculus
- Chalaza - basal part
- Seven cells and eight nuclei
- Antipodal cells
- Polar nuclei



Structure of ovule

2) What are the phases of menstrual cycle? Indicate the changes in the ovary and uterus.

Menstrual cycle :-

Reproductive period of Woman's life.

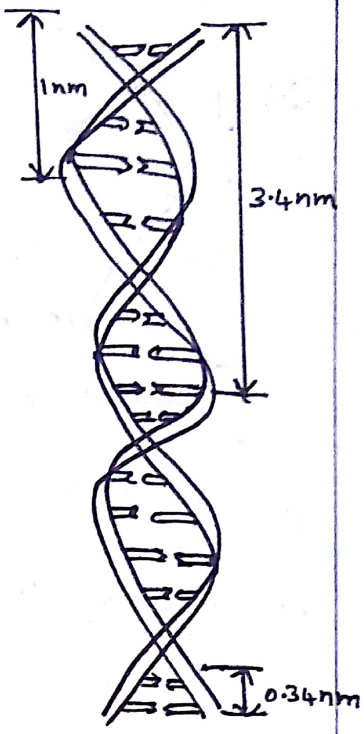
4 Phases :-

1. Menstrual phase
2. Follicular phase
3. Ovulatory phase
4. Luteal phase

S. No	Phase	Days	Hormonal changes
1.	Menstrual phase	4-5 days	Decrease in progesterone and oestrogen
2.	Follicular phase	6^{th} - 13^{th} day	Increase FSH and oestrogen
3.	Ovulatory phase	14^{th} day	LH Peak
4.	Luteal phase	15^{th} - 28^{th} day	Decrease LH and FSH Increase Progesterone

18. Heredity.

1) How is the structure of DNA organised? What is the biological significance of DNA?



- DNA molecule consists of two polynucleotide chains
- Double helix structure
- Nitrogen bases-linked with Sugar phosphate - backbone of DNA
- Purine and pyrimidine linked by hydrogen bonds.
- DNA molecule stable.
- Double helix is 34 A° (3.4 nm)
- Nucleotide joined by phosphodiester bonds.

Significance of DNA:-

- Hereditary information from one generation to next generation.
- Formation of proteins
- Controls life activities and development process.

20. Breeding And Bio-technology.

1) Discuss the importance of bio-technology in the field of medicine.

- Using genetic Engineering Techniques
- Treatment of diseases.

rDNA Technique :-

⇒ Treatment of diabetes

⇒ Treatment of growth deficiencies

⇒ Treatment of haemophilia.

⇒ Prevent Heart attack

⇒ Development of vaccines.

21. Health And Diseases

1) Changes in lifestyle is a risk factor for occurrence of cardiovascular diseases. Can it be modified? If yes, suggest measures for prevention.

- YES

Measure for prevention cardiovascular disease :-

* Diet Management :
  - Reduction intake of calories, Low saturated fat, low carbohydrate and common salt.
  - Diet rich PUFA
  - Increase intake of fibre, fruits, vegetables, Proteins, minerals and vitamins.

* Physical activity :-
  Regular exercise, walking, yoga

* Avoid Additive substance :-
  Avoid Alcohol, Smoking

22. Environmental Management

1) How does rainwater harvesting structures recharge ground water?

- Roof top rainwater harvesting :-

  Roof of houses, apartments, buildings

- Recharge pit:-

  Rain water is collected from open places.

Rural area method :-

- ✔ Digging of tanks or lakes
- ✔ Ooranis
- ✔ Eris

2) Enumerate the importance of forest.

* Forest are important
* Forest is included by
  - microorganisms
  - Plants
  - Animals
  - Dense trees
  - Shrubs
  - climbers
* Forest is economic development
* Forest is human life
* Forest provide wood, Food, fibre, fodder, medicine.
* Renewable natural resources.
* Maintaining ecological balance.

* Increase rain fall
* Reduce global warming
* Carbon sink
* Regulate climate condition
* Prevent flood
* Protect Wildlife

3) What are the consequences of soil erosion?

- Humus, mineral, salts are help to plant growth.
- So. Removal of upper layer of soil is called soil erosion.
- loss humus, nutrients
- Decrease quality of soil.
- Deerease land production.
- Flood damages to crops, lives and proberty.
- Dry and nutrient deficient
- Reduce food chain
- Desertification

4) Why is the management of forest and wildlife resource considered as a challenging task?

- ✓ Increase human population
- ✓ Killing of animals and trees
- ✓ Cutting down of trees
- ✓ Global warming and climate change
- ✓ Water scarcity and Changes rainfall
- ✓ Lack of public awarness
- ✓ Wildlife poaching.

23. Visual Communication

1) Write a short note on editor and its types?

Three parts of editor :-

a) Stage
b) Sprite
c) Script

a) Stage :-

- It is the background
- Open the scratch window
- Background is mostly white colour
- We can changes background colour

b) Sprite :-

- Characters on the background
- cat appears as a sprite
- Software provide facilities to make alternations in sprite

c) Script :-

- Edit your programs
- Edit your sprite's pictures.

:> ∞ All The Best ∞ <:

Padasalai's Telegram Groups!

(தலைப்பிற்கு கீழே உள்ள லிங்கை கிளிக் செய்து குழுவில் இணையவும்!)

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