1. TISSUE

A. Choose the correct answer:

1. The cell organelles in a living organism are made up of
i) proteins ii.fats iii. Carbohydrates
a) i only b) i and ii
c)ii and iii d) i,ii andiii

2.Which of the following is not a type of animal tissue?
a) epidermal tissue b) epithelial tissue c) connective tissue d) muscular tissue

3. A group of individuals of the same species make up a/an
a)biosphere b)ecosystem c)population d)organization

4. Which of the following statements is true for meristematic tissue?
a) consist of a group of actively dividing cells
b)the cells have thin cell wall and nucleus is absent
c) intercalary meristem is found at the tip of rots
d) apical meristem occurs below the bark and in vascular bundles of dicot stem and root

5.Where is squamous epithelial tissue found?
a) lining of the mouth b)nasal cavity c)outer layer of skin d)all of these

6. The statements below describe a certain connective tissue
i) It is hard but porous and contains a good supply of blood vessels
ii)The cells are arranged in concentric rings
iii) The cavity is filled with bone marrow
Which connective tissue is described?
a)blood b)bone c)cartilage d) tendon

7.The involuntary muscles that helps in the movement of food and urine are
a) striated muscles b) unstriated muscles c) cardiac muscles d) both a and b

8. Which of the following represents the correct path of nerve impulses in a neuron?
a.)dendrites →cyton→axon
b)cyton →dendrites→ axon
c)axon→dendrites→cyton
d)axon→cyton→dendrites

B. Name the following:

1.The living matter of the cell-protoplasm
2.The tissue that bring about movement in animals- muscular tissue
3. The organ system that helps in gaseous exchange in human beings- respiratory system
4.An endocrine gland- thyroid gland, pancreas
5. The organ system that consists of nerves – Nervous system
6. The envelope of gases surrounding the earth-atmosphere
7. The study of tissues- histology
8. The two conducting tissues of plants-xylem and phloem
9. The part of seed forming the root-radicle
10.The tissue in the bark of trees-dermal tissue
11.The only living component of the xylem-xylem parenchyma
12.The only plant cell without nucleus-sieve tube cell
13.Fluid connective tissue surrounding body cells-lymph
14.Pigment that gives colour to blood-haemoglobin
15.Single, long cylindrical process of neuron-axon

C. Fill in the blanks with suitable words:

1. Flower is the reproductive organ of the plant
2. The space between two nodes is internode
3. Lymph consists of plasma and WBCs
4. The terminal ends of axons have synaptic knobs
5. Each muscle tissue has contractile fibres
6. Sprain is caused by pulling of ligaments
7. Plasma is pale yellow in colour and is a non-living substance
8. Wind pipe has ciliated columnar epithelial tissue
9. Older xylem forms wood of plants
10. Waxy, water proof covering of leaves is called cuticle
11. Xylem and phloem form the conducting tissue of plant
12. Cyton consists of nucleus and nissl granules.

D. True or false:

1. The epithelial tissue coordinates functions of various body parts-false
2. Trachea is a part of the circulatory system-false
3. Ligament is made of white fibrous tissue - false
4. Adipose tissue is also called padding tissue - true
5. Collenchymas is a simple permanent tissue-true
6. Roots bear multicellular root hairs-false
7. Hemp and flax are sclerenchyma fibres-true
8. Xylem transports manufactured food from leaves to all parts of plants-false
9. The inner lining of mouth has squamous epithelial tissue-true
10. Ligaments connect muscles to bones-false
11. Skull protects heart and lungs-false
12. Connection between two neurons is called synapse-true

E. Match the following(direct answer):

1. Glands	hormones
2. Decomposers	bacteria
3. Almonds	sclereids
4. Cortex	parenchyma
5. Leaf stalk	collenchyma
6. Leaf veins	sclerenchyma
7. Platelets	clotting of blood
8. Bone	porous
9. Nissl granules	cyton
10. Sweat glands	modified columnar cells

F. Answer the following questions:

1. State four major characteristics of living being

A. The major characteristics of living beings are:

a) Living organisms increase in size by addition of materials inside the body (growth)

b) Consciousness and responding to external stimuli is a defining property of living organisms

c) Living organisms take in nutrients as food

d) Living beings form new individuals of their own kind by reproduction

2. Name all the levels of organization, higher to an organism

A. The levels of organization, higher to an organism are: population, community, ecosystem, and biosphere

3.Mention the major organs and the functions of the following organ systems

a) Digestive system b) excretory system

c) Reproductive system d) endocrine system

System	Major organs	Functions
Digestive system	Alimentary canal and digestive glands	Ingestion, digestion, absorption of food and egestion of faecal matter
Excretory system	Kidneys, ureters, urinary bladder, urethra	Removes metabolic wastes from the body
Reproductive system	Males-testes, sperm ducts, urethra , penis Females- ovaries, oviducts, uterus , vagina	Produces male and female gametes
Endocrine system	Thyroid glands, pancreas, pituitary gland	Secretion of hormones which influence metabolic processes

4. What is the most important function of the cardiac muscle?

A. Cardiac muscles are involuntary in nature and help in the rhythmic contraction of heart and pumping blood to different parts.

5. List the major components of an ecosystem

A. The major components of an ecosystem are:

a) Abiotic or non-living components which include soil, water, light, temperature etc

b) Biotic or living components which include producers (green plants), consumers (animals) and decomposers (bacteria)

6. State the function and location of the following tissues

a) Cambium b)dermal tissue c)parenchyma

d)stratified epithelium e)cartilage f)nervous tissue

Tissues	Location	Function
Cambium	Below the bark and in the vascular bundles of dicot stem and root.	Helps in increasing the girth or width of the plant.
Dermal tissue	Outer surface of roots, stems and leaves	Protects the underlying layers
Parenchyma	Soft parts of the plants like cortex and pith regions of root	Storage of food, providing temporary support , helps photosynthesis in chlorenchyma cells
Stratified epithelium	Skin and cornea	Protection from bacteria
Cartilage	Bones end, external ear, tip of nose, rings of trachea	Support and protection
Nervous tissue	Brain, spinal cord, body nerves and sense organs	Concerned with perception and responses of animals

7. What is intercalary meristem? How does it differ from lateral meristem?

A. **Intercalary meristem**:- this meristem is located at the base of the internode. It helps in the elongation of the intermodal region.
Lateral meristem: it occurs below the bark and in the vascular bundles of dicot stem and root. This meristem takes part in increasing the girth or width of the plant. This growth is called secondary growth of plant
8. Name and discuss in brief the major organs of the shoot system of the plant
A. The shoot system is the part of the plant that grows above the ground. It consists of the following parts:
a) stem- it is the part of the plant that holds leaves, branches, flowers and fruits
b) branch- it is the part of the plant that grows from the main stem and holds the leaves, flowers and fruits
c) leaf- it is the flat, green structure that helps the plant to make food by photosynthesis.
d)bud- the axillary bud that develops in the axil of the leaf gives rise to branches or flowers. The terminal bud is an undeveloped shoot made up of overlapping leaves. All stem and branches end in a bud.
e)node-it is the part on the stem from which a leaf arises
f)internode- the space between two nodes is the internode
g) flower- it is the reproductive part of the plant. It contains the male and female parts.

9. Why are skeletal muscles called voluntary muscles?
A. Skeletal muscles are called voluntary muscles because their working can be controlled. They help in the movement of bones and body parts.
10. Which cells form the police force of the body? Why?
A. White blood cells or WBCs are irregular in shape and engulf germs and protect the body against diseases. So they are called the police force of the body.

G. Define the following terms:
1. Anatomy-It is the study of the internal structure of organisms
2. Anaemia- A person having less amount of haemoglobin in blood suffers from a disease called anaemia
3. Phloem-They are made up mostly of living cells. It is a complex tissue which transports prepared food from the leaves to all parts of the plant.
4. Piliferous layer-The epidermal layer in roots which bears unicellular root hairs is called piliferous layer
5. Organization- It is the manner in which smaller units or constituents of any structure are aggregated into higher or larger units

H. Differentiate between the following:

Meristematic tissue	***Permanent tissue***
1.Cells are capable of active division	Cells are no longer capable of division
2.These tissues are mostly found in the growing tips of the roots, shoots and branches.	These tissues form the bulk of the plant body
Packing tissue	***Padding tissue***
1.It form a packing around organs	It forms a padding below the skin
2. It is found below the epidermis of the skin and helps to withstand pulling sprain.	It is found below the dermis of the skin, around kidneys and eyeball. It helps in insulation
Apical meristem	***Lateral meristem***
I1. It is the present at the tips of root, stem and their branches	It occurs below the bark and in the vascular bundles of dicot stem and root.

2. it produces growth in length of the part where present	It increases the girth of width of the plant.
Cuboidal epithelium	***Columnar epithelium***
1.They are cube-like cells , whose length and breadth are same	They are cylindrical or brick-like cells with nucleus near the base
2.They are present in the kidney tubules, salivary glands	They are present in inner lining of stomach and intestines
Red blood cell	***White blood cell***
1. They are circular, disc shaped in outline without nucleus	They are nucleated irregular in shape
2. They help in carrying oxygen to all cells of the body	They engulf germs and protect the body against diseases.
Smooth muscle	***cardiac muscle***
1.They are spindle shaped, uni-nucleated and do not have light and dark bands	They are cylindrical and branched, uni-nucleated and have light and dark bands.
2. They help in the movement of food, urine etc.	They help in the rhythmic contraction of heart and pumping blood to different parts.

EXTRA NOTES:

Draw neat and labeled diagram

1. Root and shoot system in a plant (figure 1.9)
2. A typical neuron (fig 1.30)

Experiment:

1.With an experiment , show that conduction of water takes place through the xylem. (figure 1.18)

Aim: to show that the conduction of water takes place through the xylem

Procedure: take a twig of tuberose or any other plant having white flowers. TaKe a beaker half filled with water. Add two drops of eosin to the water. The water turns red in colour. Now immerse the twig of the plant into the coloured water and keep it overnight.

Observation: The next day, the white flowers will be seen to have turned red. When sections of the stem of the plant is cut, it will be seen that only the xylem is coloured.

Conclusion: water conduction in plants takes place through xylem

2. With an experiment, observe the action of apical meristematic tissue. (figure 1.13)

Aim: To observe the action of apical meristematic tissue

Procedure: Take some dry gram seeds and soak them in water overnight. Next day, throw out the water and take out the soaked seeds. Take a saucer and place moist cotton wool on it. Now place the soaked seeds on the moist cotton wool and leave it for another day. On the third day, you will observe a white structure coming out from the seeds. Go on sprinkling water on the cotton wool and let the sprouted seeds remain for a few days.

Observation: It will be seen that the white structure elongates more.

Conclusion: The white structure is the radical. The tip of this radical has apical meristem, where cells divide and the radical elongates to form the root.

Choose the odd one out

1. Ecosystem, cell, tissue, organs
2. Nose, bones, trachea, lungs
3. Brain, spinal cord, ureter,nerves
4. Ovaries, oviduct, uterus, testes
5. Kidney, urinary bladder, urethra, heart
6. Epidermal tissue, ground tissue, nervous tissue, vascular tissue
7. Parenchyma, collenchyma, xylem, sclerenchyma
8. Skeletal tissue, squamous tissue,cuboidal tissue, glandular tissue
9. Areolar tissue, adipose tissue, blood, ligaments
10. Tracheids, vessels, sieve tubes, xylem fibres