WRITE YOUR ANSWERS IN YOUR ANSWER BOOKLET.
DO NOT COPY THE QUESTIONS.

1. State TRUE or FALSE to the following statements. Do not copy the statements. (20 marks)
   i. The leaf is usually green due to the presence of the pigment, chlorophyll.
   ii. Adventitious roots also develop on stem and leaf cuttings.
   iii. Reproduction is the function of the androecium only.
   iv. The formation of female gamete takes place inside the pollen.
   v. Drum-stick seeds are dispersed by wind.
   vi. Testa is the inner seed coat.
   vii. Germination is the series of changes occurring in an embryo and resulting in a seedling.
   viii. Sacral region of the rabbit's vertebral column consists of twelve vertebrae.
   ix. The spinal cord is the centre of a large number of spinal reflexes.
   x. The glucose formed during photosynthesis is stored temporarily as starch in leaves.
   xi. Chewing is a mechanical breakdown of food which is not changed chemically.
   xii. The rate of respiration depends mainly on the carbon dioxide concentration of the blood.
   xiii. Translocation is the movement of dissolved substances through a plant.
   xiv. All serum globulins are antibodies.
   xv. Plants cannot respond to light, gravity, touch and water.
   xvi. A reflex arc involves only two neurones; the sensory and intermediate neurones.
   xvii. The period between fertilization and birth is called gestation period.
   xviii. Meiosis assures that each daughter cell is genetically identical to the mother cell.
   xix. Deoxyribonucleic acid has the capacity for self-replication.
   xx. Parasitism benefits the parasite but harms the host.
2. Complete the following statements with appropriate words. Do not copy the statements. (20 marks)

   i. Venation is the arrangement of the \_\_\_\_\_\_\_\_\_\_\_\_\_ on a leaf surface.
   ii. The pitcher plants obtain part of their \_\_\_\_\_\_\_\_\_ food by catching insects.
   iii. Inflorescence may be classified into \_\_\_\_\_\_\_\_\_ and cymose.
   iv. Cross-pollination brought about by animals is termed as \_\_\_\_\_\_\_\_\_.
   v. An aggregate fruit is composed of more than one \_\_\_\_\_\_\_\_\_.
   vi. A sheath called the \_\_\_\_\_\_\_\_\_ covers the plumule and the radicle by the sheath coleorhiza.
   vii. The cotyledon remains buried in the soil in \_\_\_\_\_\_\_\_\_ method of germination.
   viii. Posterior mesenteric artery supplies blood to the hinder part of the \_\_\_\_\_\_\_\_\_.
   ix. Each \_\_\_\_\_\_\_\_\_ nerve consists of sensory and motor nerve fibres.
   x. Constipation is the result of insufficient \_\_\_\_\_\_\_\_\_ in the diet.
   xi. Carnassials are adapted for \_\_\_\_\_\_\_\_\_ and chewing food.
   xii. Inspiration and \_\_\_\_\_\_\_\_\_ occur during the process of gaseous exchange in a mammal.
   xiii. Turgor pressure in plant cells supports leaves and \_\_\_\_\_\_\_\_\_ plant stems.
   xiv. Cells in the blood are of three types: erythrocytes, \_\_\_\_\_\_\_\_\_ and thrombocytes.
   xv. The ciliary muscles in the human eye control the \_\_\_\_\_\_\_\_\_ of the lens.
   xvi. The hormone insulin converts glucose to glycogen for storage in liver and \_\_\_\_\_\_\_\_\_.
   xvii. The umbilical cord connects the \_\_\_\_\_\_\_\_\_ body to the placenta.
   xviii. A homozygote produces only one kind of \_\_\_\_\_\_\_\_\_.
   xix. The presence of the Y chromosome may determine a tendency to \_\_\_\_\_\_\_\_\_.
   xx. Animals that feed on both plants and animals are termed as \_\_\_\_\_\_\_\_\_.

3. Answer **ALL** questions. (12 marks)

   a. State the functions of the root.
   b. Give a brief account of cranial nerves.
   c. Give a dental formula of a carnivore and its food source.
d. Explain what happen at the end of inspiration.

OR

Write briefly on cooling effect of leaf.

e. State the structure and function of two types of glands found in human skin.

OR

Give the labels of the following diagram. (Do not copy the diagram.)

f. Write a brief account on artificial selection.

OR

State what is meant by the term pollution.

4. Answer ANY FOUR questions. (16 marks)

a. Describe the gynoecium of a flower.

b. Give the labels in the following diagram showing respiratory system of a rabbit. (Do not copy the diagram.)

c. Describe the peristalsis mechanism of the gut.

OR

Describe anaerobic respiration during strenuous exercise.

d. Discuss "transpiration stream" and "transpiration pull"

OR

Mention any four types of limb muscles associated with their respective functions.

[P.T.O]
e. Write short accounts on fertilization and implantation.

OR

Define the terms genotype and chromosomes.

OR

Explain why smoking is the primary cause of many fatal diseases.

5. Answer ANY FOUR questions. (32 marks)

a. Describe the third stage of germination of a bean seed with relevant diagram.

b. Provide the labels and caption in the following diagram and describe the stomach of a rabbit. (Do not copy the diagram.)

![Stomach Diagram](image)

1. 2. 3. 4. 5. 6. 7. 8.

c. Explain how a leaf can be tested for the presence of starch.

d. Draw a fully labeled diagram to demonstrate that carbon dioxide is released during respiration and explain it.

OR

Describe how water and mineral salts are absorbed by the plant.

e. Explain vividly on the motion responses and geotropism as found in plant.

OR

Compare the eggs and sperms of human. (Illustration is not necessary.)

f. Define the term genes and state the Gregor mendel’s rules of genetics.

OR

Give a word diagram of the carbon cycle.