

2018

MATRICULATION EXAMINATION

DEPARTMENT OF MYANMAR EXAMINATION

BIOLOGY

Time Allowed: (3) Hours

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.

[P.T.O]

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 happens at the end of inspiration.

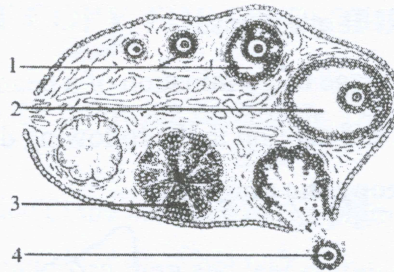
OR

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.

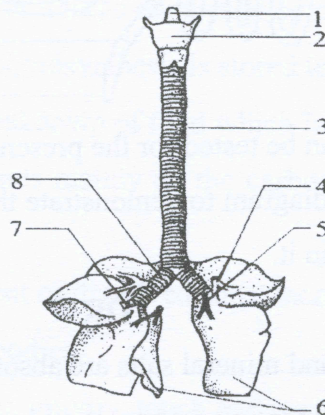
OR

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.

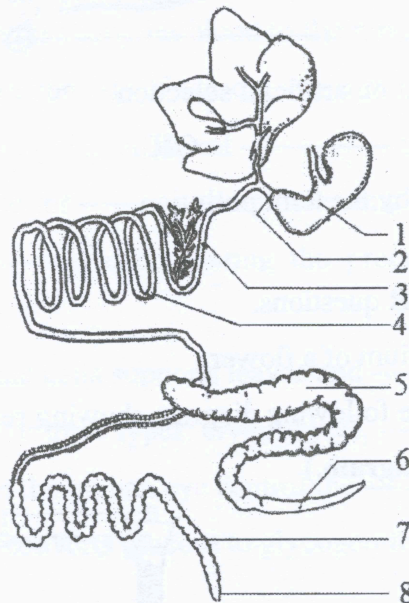
OR

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

5. Answer **ANY FOUR** questions.

(32 marks)

- Describe the third stage of germination of a bean seed with relevant diagram.
- Provide the labels and caption in the following diagram and describe the stomach of a rabbit. (**Do not copy the diagram.**)



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

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

OR

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

- Define the term genes and state the Gregor mendel's rules of genetics.

OR

Give a word diagram of the carbon cycle.
