

MATRICULATION EXAMINATION

DEPARTMENT OF MYANMAR EXAMINATION

BIOLOGY

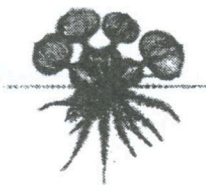
Time Allowed: (3) Hours

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. (10 marks)
- Leaves of the banana have unicostate and reticulate venation.
 - The sunflower is an unusual type of racemose inflorescence.
 - Dyes are one of the commercial products obtained from fruits.
 - The pancreatic duct opens into the proximal loop of the duodenum.
 - Animals use light energy to make their food from carbon dioxide and water.
 - The presence of a true muscular diaphragm helps the efficiency of ventilation.
 - Carbohydrates are transported out of the leaf in the form of sucrose to the stem.
 - The central nervous system of mammals is made up of the brain and spinal cord.
 - Sexual reproduction has a great deal of commercial importance.
 - The fungi provide moisture and dissolve minerals from the rock.

2. Choose the correct answer for the following statements. Do not copy the statements. (10 marks)
- i. The following diagrams show modified leaves. Which diagram shows the Sundew?



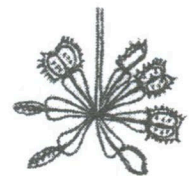
(A)



(B)



(C)



(D)

- ii. The corolla is the (A. first B. second C. third D. fourth) whorl of the flower, and consists of coloured petals.
- iii. A seed is a fertilized and mature (A. endosperm B. gamete C. micropyle D. ovule), consisting of an embryo, one or two cotyledons, and seed coat.

- iv. Arising from the right ventricle is the (A. aortic B. pulmonary C. carotid D. coeliac) arch.
- v. Chlorophyll in green plants spread out on stacks of membranes in the (A. cytoplasm B. protoplasm C. chloroplasts D. nucleus).
- vi. Anaerobic respiration is the breakdown of (A. glucose B. ATP C. ADP D. starch) into energy in the absence of oxygen.
- vii. Red blood corpuscles are termed as (A. monocytes B. granulocytes C. thrombocytes D. erythrocytes).
- viii. Iris of the human eye controls the size of (A. pupil B. cornea C. retina D. lens), thus controlling the amount of light entering the eye.
- ix. Chromatid pairs are at the equator of the cell in (A. prophase B. metaphase C. anaphase D. telophase) of mitosis stages.
- x. The green plants that produce their own food are termed as (A. consumers B. producers C. decomposers D. omnivores).

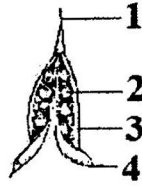
3. Complete the following statements with appropriate words. Do not copy the statements. (10 marks)

- i. Branches of the primary root are known as secondary roots or ----- roots.
- ii. Cross-pollination brought about by wind is called -----.
- iii. The seeds of tomatoes are ----- pass out with the faeces.
- iv. The anterior ----- and posterior ileum constitute the small intestine.
- v. The function of premolar and molar are for crushing and ----- food.
- vi. In aerobic respiration, the glucose is completely ----- to carbon dioxide and water.
- vii. The forces of water from the roots to the leaves is termed as the -----pull.
- viii. The hormone adrenaline causes fear, anger and -----.
- ix. Mother's milk contains -----to fight certain diseases.
- x. Parasite ----- occur in both plants and animals.

4. Answer **ALL** questions.

(10 marks)

- a. Provide labels to the given diagram. **(Do not copy the diagram)**



Clitorea

- b. Describe the characteristics of mammals in association with the circulatory and respiratory system.
- c. Clarify the leaf is adapted for the distribution of its photosynthetic products.
- d. Mention the utilization of water as solvent.

OR

What do you know about the nature of human eye?

- e. Explain what happens at the time of pollination and during double fertilization of sexual reproduction in plants.

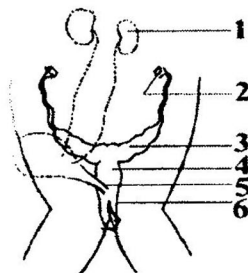
OR

Define the term gene locus used in genetics.

5. Answer **ANY FOUR** questions.

(20 marks)

- a. Give labelled diagram, caption and describe the phylloclade and functions of the stem.
- b. Provide labels and a caption to the given diagram and describe the formation of uterus, vagina and vestibule of the rabbit. **(Do not copy the diagram)**



- c. Give a word diagram to show the pattern of animal nutrition.

- d. Explain the nature of erythrocytes found in mammals with diagrams.

OR

List the plant hormones and explain the ethylene and phototropism of shoots and roots.

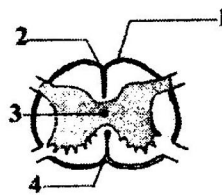
- e. Explain the structures and functions of female reproductive system of man.

OR

Define the term mutualism and explain the mutualistic relationships between fungi and cyanobacteria.

6. Answer **ANY FOUR** questions. (40 marks)

- a. Give labelled diagram of *Hibiscus* leaf and explain the leaf blade, petiole, stipules and economic importance of leaves.
- b. Provide labels and caption to the given diagram and describe the structure of spinal cord. **(Do not copy the diagram)**



- c. Give labelled diagram of transverse section of a leaf and explain the structure and function of upper epidermis.
- d. Write a detailed account on the lymph system.
- e. Discuss on the reflex action, reflex arc and endocrine glands in mammals.

OR

Explain the commercial importance of asexual reproduction and sexual reproduction in plants.

- f. Determine the genotype and phenotype of offspring from following four types of mating in the guinea pig (a dominant allele **B** produce black hair and its recessive allele **b** produce white hair).

(i) BB x BB

(ii) BB x bb

(iii) Bb x bb

(iv) bb x bb

OR

Explain how cycles are important in an ecosystem and write a detailed account on the water and carbon cycle in nature. **(Illustration is not necessary)**