

2019

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)
 - i. Many roots such as carrot and radish are eaten raw or cooked.
 - ii. The receptacle of a flower bears three sets of floral leaves.
 - iii. The cotyledons also serve as the very first pair of leaves of the seedling.
 - iv. The oesophagus passes through the neck and thorax in digestive tract of the rabbit.
 - v. Formalin is used to demonstrate anaerobic respiration in germinating seeds.
 - vi. The physiological dead space includes the mouth, pharynx, trachea, bronchi and bronchioles.
 - vii. The movement of water through a semipermeable membrane is termed as osmosis.
 - viii. Since shoots curve towards light, they are positively phototropic.
 - ix. The term hybrid is synonymous with the homozygous condition.
 - x. Organic compounds release carbon dioxide into the air during respiration.
2. Choose the correct answer for the following statements. Do not copy the statements. (10 marks)
 - i. Cells are dividing rapidly in this region. (A. root cap B. meristematic region C. region of cell elongation D. region of maturation)
 - ii. Which one is aggregate fruit in the following diagrams?



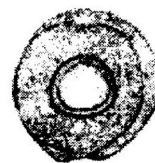
A



B



C



D

- iii. In maize grain, the aleurone layer consists of proteins and (A. alkaloid B. lignin C. cellulose D. fats).

[P.T.O]

- iv. Innominate artery supplies to head and (A. face B. fore-limbs C. liver D. kidneys).
- v. For regulate metabolic reactions and to form certain body substance, the (A. proteins B. vitamins C. minerals D. fibers) are need in our healthy life.
- vi. Respiration is the breakdown of (A. glucose B. sucrose C. maltose D. fructose) in living cells.
- vii. In sweating and transpiration, water act as (A. solvent B. reactant C. coolant D. lubricant).
- viii. Muscles of the limbs can be divided according to their functions into (A. four B. five C. six D. seven) groups.
- ix. There are six types of mating possible among the (A. two B. three C. four D. six) genotypes in single gene crosses.
- x. The group of repeated changed that water molecules undergo in the atmosphere is (A. carbon B. hydrogen C. water D. nitrogen) cycle.

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

- i. The stem of jute produces important -----.
- ii. Aung-me-nyo and Dan-pan are dispersed by ----- mechanism.
- iii. The cotyledons are raised above the ground is called ----- germination.
- iv. The scrotum of the rabbit is a ----- of the body wall.
- v. The elimination of undigested materials from the gut is called -----.
- vi. Aerobic respiration process is a slow, systematic oxidation, controlled by many -----.
- vii. Water makes up two-thirds or more of living active -----.
- viii. The receptor organ receives the ----- and generates an impulse.
- ix. A sac-like membrane around the human embryo, filled with a watery fluid called ----- fluid.
- x. The male produces tow kinds of gametes is said to be the ----- sex.

4. Answer **ALL** questions. (10 marks)

- a. Give a labeled diagram to show the second stage germination as found in a bean seed.
- b. Describe the location and prominent features of optic lobes of rabbit's brain.
- c. Explain the nature of open root of teeth in mammals.

- d. State how respiratory movements are controlled in mammals.

OR

State the purpose of water acting as solvent.

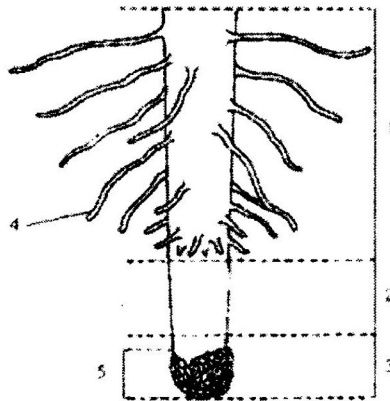
- e. State the events of mitosis as they occur in metaphase and anaphase.

OR

Define the ecology and ecosystem.

5. Answer **ANY FOUR** questions. (20 marks)

- a. Provide labels and caption to the given diagram and state about on the part that protects the root tip. (Do not copy the diagram)



- b. Explain the general characters of mammals associated with circulatory, respiratory, nervous and excretory systems.
- c. State the function of human alimentary canal and explain the general pattern of animal nutrition with word diagram.
- d. Give a chemical equation of aerobic respiration and list the activities that utilized energy released from ATP.

OR

Tabulate the structure and functions of two layers of epidermis in the human skin.

- e. Explain the importance of mitosis and meiosis.

OR

State the causes of diseases except bacteria, viruses, protozoa and fungi and describe the diseases caused by stress.

6. Answer **ANY FOUR** questions. (40 marks)
- Explain the three kinds of the relative position of the floral whorls with respect to the ovary. (Illustrations are not essential)
 - Give a labeled diagram of the rabbit's female reproductive system and state the formation of uterus, vagina and vestibule.
 - Tabulate how the leaf is adapted to obtain light, water and carbon dioxide for photosynthesis.
 - State the formation and functions of lymph system. (Illustration is not essential)
 - Explain why and how organisms respond to stimuli citing examples.

OR

State the important structures and functions of the female reproductive system and also briefly explain on the gestation period as found in human.

- Define the term "gene locus" used in genetics and explain the nature of pure line and the heterozygous genotypes with the help of diagram.

OR

Name the stages that occur in water cycle together with the types of dotted upward arrows and straight line downward arrows, as indicated in the diagram and give explanation on how carbon cycle occurs in nature. (Do not copy the diagram)

