

2017

MATRICULATION EXAMINATION

DEPARTMENT OF MYANMAR EXAMINATION

BIOLOGY

Time Allowed: (3) Hours

WRITE YOUR ANSWERS IN YOUR ANSWER BOOKLET.

DO NOT COPY THE QUESTIONS.

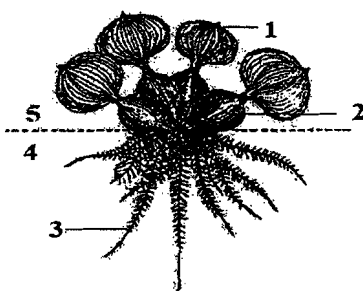
1. State **TRUE** or **FALSE** to the following statements. Do not copy the statements. (20 marks)
- i. Many branches of *Hibiscus* arise from ground level.
 - ii. Peas, beans and tomatoes grow in dry places.
 - iii. The pedicel and receptacle do not form the axis of a flower.
 - iv. Sticky pollen grains of entomophilous flower stick easily to the body of insects.
 - v. The pericarp of *Clitorea* splits open when mature.
 - vi. The opposite end of the radicle is the plumule in the embryo of a bean seed.
 - vii. The fusion of the fruit-wall and seed coat forms the outermost layer in a bean seed.
 - viii. Pylorus guards the opening of the posterior end of the rabbit's stomach.
 - ix. The longitudinal section of the rabbit's kidney shows three main zones.
 - x. The release of oxygen from green plants is an indication of photosynthesis.
 - xi. The lateral movements of lower jaw are present in omnivores.
 - xii. The diaphragm is concave towards the thorax when at rest.
 - xiii. Absorption of water from the soil by the root can be done by diffusion.
 - xiv. Lymphatic carry deoxygenated fluid towards the heart.
 - xv. Blinking is one example of a reflex action.
 - xvi. The six muscles of the human eye can make the eye ball move in the socket.
 - xvii. Sperms swim up the uterus through the mucus lining to fallopian tube immediately before mating.
 - xviii. Mitosis preserves the haploid condition.
 - xix. A recessive characteristic can appear only if the genotype is heterozygous.
 - xx. Smoking is the primary cause of many fatal diseases.

[P.T.O

2. Complete the following statements with appropriate words. Do not copy the statements. (20 marks)
- Betel plant with -----stem produce adventitious roots from the node.
 - The leaf bases transform in leaf----- in banana plant.
 - Inflorescence is a-----of flowers on the same main stalk.
 - The pollen tube penetrate the stigma and grows down the-----.
 - The seed of mango is thrown away after the -----part is eaten.
 - In the first stage of bean seed germination, seed coat burst at the -----end.
 - The grass family is most important among -----plants.
 - The three venae cavae open directly into the -----auricle.
 - Intercostal arteries supply the -----of the ribs.
 - Leaves are usually flat and broad, exposing large-----to light.
 - In herbivores, the gap between incisor and premolar is termed as-----.
 - The energy produced by respiration is stored as ATP in the -----.
 - Plants would wilt without -----pressure.
 - Spleen produces both ----- and monocytes.
 - A series of -----to link the system to all parts of the body.
 - Hormones are chemical substances produced in -----quantities.
 - Budding is a form of -----most often used commercially.
 - The cell cycle includes an additional stage termed-----.
 - Pure line a group of individuals with similar ----- background.
 - Parasite can reduce the -----of a host population.

3. Answer ALL questions. (12 marks)

- a. Provide labels and caption to the given diagram, name its type. (Do not copy the diagram.)



- Name the veins which bring blood from the digestive tract of rabbit.
- List two mesophyll layers of leaf and state the structure of it.

- d. State what occur after a few days in the experiment show the release of energy in germination seeds during respiration.

OR

Briefly explain how lymphatics are unlike veins.

- e. State the effects of the hormone adrenaline of man.

OR

Account the functions of two umbilical arteries and one umbilical vein in human.

- f. Tabulate cell types and descriptions of the mitosis versus meiosis.

OR

State how rainwater undergoes physical changes on the earth.

4. Answer **ANY FOUR** questions. (16 marks)

- a. Give a fully labeled diagram of a tomato and state how the seeds of this fruit are dispersed.
- b. Name the part of the brain of rabbit and state the nature of ventricles in the brain.
- c. State the factors controlling photosynthesis and mention the effect of temperature on the rate of photosynthesis in plants.

OR

Briefly account on the rate of respiration in mammals.

- d. State the transport in larger invertebrates and vertebrates.

OR

Tabulate the functions of conjunctiva, cornea and choroid as found in human eye.

- e. Give labeled diagram of the egg and state the numbers of produced eggs as found in human.

OR

State how the mutation occurs in organisms.

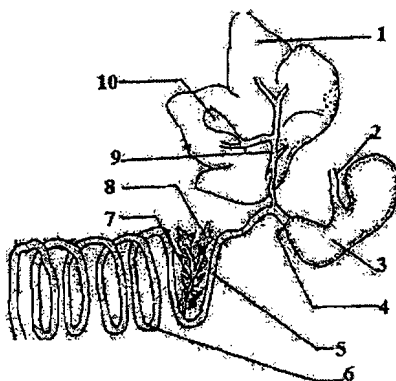
OR

State the process of nitrification and denitrification in the nitrogen cycle.

[P.T.O

5. Answer **ANY FOUR** questions. (32 marks)

- Give fully diagrams of the third and fourth stages of germination of maize grain and explain process of fourth stage and mentioning its method of germination.
- Provide labels to the given diagram and state the nature of parts indicated by labels number 1 and 7. **(Do not copy the diagram.)**



- Tabulate how the plants get the materials required for photosynthesis from their environment.
- Clarify the term “respiration” and give a word diagram to show the ATP formation and state the result of the experiment of anaerobic respiration.

OR

Clarify the blood and explain the nature of fluid plasma in it.

- What are the neurones? Mention the parts of typical neurone and types of neurones in mammals.

OR

State the important structures and functions of the male reproductive system of man and give a labeled diagram of the sperm .

- List and explain the differences in certain features related to selection and state the natural selection.

OR

State the effects of air, land and water pollution and explain how factory wastes causes water pollution.
