2015

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. Plants with weak stems are climbers and creepers.

ii. Support and conduction are main functions of the root.

iii. The lateral flowers are always older and open earlier than the terminal flowers in cymose inflorescence.

iv. Cleistogamous flowers are bisexual and closed flowers.

v. Mango is an example of fruits with large seed.

vi. The food for the growing embryo is stored in the endosperm in monocot seeds.

vii. The coleoptile covers the radicle and the coleorhiza covers the plumule.

viii. In excretory system of a rabbit, the left kidney is little anterior to the right.

ix. Club-shaped olfactory lobe is located in front of the cerebral hemispheres.

x. Photosynthesis is the process by which green plants use light energy to manufacture glucose.

xi. Digestible residues in the vacuoles are egested at the cell anus in *Paramecium*.

xii. In aerobic respiration, carbon dioxide and water are released as waste products.

xiii. Land organisms need more strong skeletons than aquatic organisms.

xiv. The transpiration stream carries mineral salts from the leaves to the roots.

xv. Ethylene is important in the ripening of fruits.

xvi. Negatively phototropic means plants grow directly towards the light.

xvii. Mothers milk contains antibodies to fight certain diseases.

xviii. In mitotic cell division, daughter cells contain half of the total number of chromosomes present in parent cells.

xix. Man has succeeded in breeding animals and plants with certain qualities by artificial selection.

xx. The production of radioactive materials causes pollution.

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2. Complete the following statements with appropriate words. Do not copy the statements. (20 marks)

i. Parasites have to depend on other organisms for their ----------.

ii. The leaves of monocots (e.g. banana) have unicostate and ---------- venation.

iii. The pollen grain bears male reproductive cells or ----------.

iv. Androecium and gynoecium are known as ---------- whorls of flowers.

v. The seed of Poppy is dispersed by ----------.

vi. In a bean seed, the slender acute end of the embryo is the ----------.

vii. In hypogeal germination, the ---------- and endosperm remain in the soil.

viii. A complete muscular ---------- separates the lungs and the heart from the abdominal cavity.

ix. The wind pipe comprises the ---------- and a long trachea.

x. Factors controlling photosynthesis are light intensity, ---------- and CO_2.

xi. Carbohydrates and fats supply ---------- needed for living organisms.

xii. The amount of released energy in aerobic respiration is ----------.

xiii. The absorption of water from the soil by root can be done by ----------.

xiv. In many erythrocytes (RBCs) are ---------- circular discs without nuclei.

xv. Plants respond to light, gravity, ----------, and water.

xvi. Sensory neurones conduct ---------- from the sense organs to the central nervous system.

xvii. One of the sperms may fuse with an egg to form a ----------.

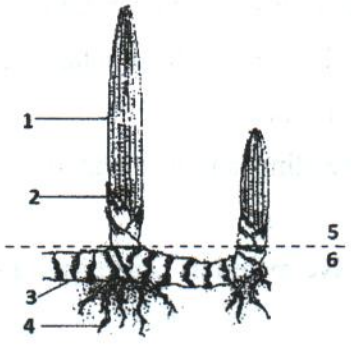
xviii. DNA with the help of RNA, controls ---------- synthesis within the cytoplasm.

xix. In metaphase stage of mitosis, chromatid pairs are at the ---------- of the cells.

xx. Animals that feed on carnivores are termed as ---------- consumers.

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

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



b. Describe the cranial nerves in the rabbit.

c. Explain the important of nitrogen in mineral nutrition of plants.

d. Give an explanation on alcohol fermentation.

OR

State the purpose of water acting as solvent.

e. Name the seven groups of limb muscles in man.

OR

Mention about the budding of asexual reproduction in plants.

f. State the continuous variation with some examples.

OR

What are the suspended particles and poisonous chemicals in factory wastes?

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

a. Explain about the changes after fertilization.

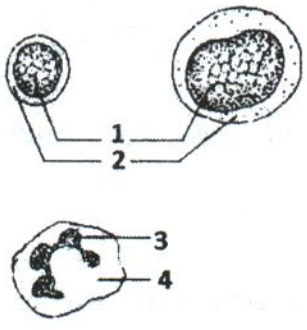
b. Write short notes on axial skeleton, appendicular skeleton and the vertebral column.

c. Tabulate the structures and functions of incisor, canine and cheek teeth.

OR

Mention the steps to demonstrate the release of energy in germinating seeds during respiration. **(Diagram is not necessary.)**

d. Provide labels to the given diagrams. Describe the structure and function of granulocyte.



OR

Explain about the chief growth hormone of plants.

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e. Describe the vegetative propagation with suitable examples.

OR

With the help of a word diagram explain about the pure line in genetics.

OR

Name the three types of symbiotic relationships and explain about the parasitism.

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

a. Draw fully labeled diagrams for the stages 1 and 2 of a bean seed germination and explain about these stages. Name the type of germination in bean seed.

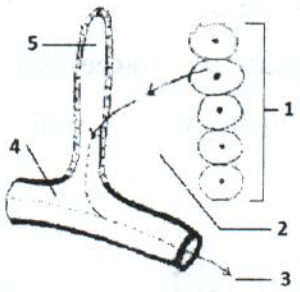
b. Explain about the digestive tract of a rabbit from the mouth to stomach. **(Illustration is not essential.)**

c. Draw a summarized word diagram for plant nutrition and explain how the leaf is adapted for the distribution of its photosynthetic products.

d. Define the term anaerobic respiration with suitable equation and explain about anaerobic respiration in animals.

OR

Provide labels and caption to the given diagram and explain about the functions of the lymph system. **(Do not copy the diagram).**



e. What are the hormones and endocrine organs? Mention the effects of insulin and thyroxine hormone.

OR

Describe the important structures and functions of the female reproductive system and explain about the implantation.

f. Explain about the Gregor Mendel's rules of genetics.

OR

Explain about the water cycle and describe the main effects on inland water pollution. **(Illustration is not essential.)**