Name: _____Adm No: _____Class: _____
Candidate's Signature: _____ Date: _____

BIOLOGY
PAPER 1 (231/1)
FORM THREE
END TERM 3 2024
Time: 2 HOURS

Instructions to Candidates

Write your name, class and admission number in the spaces provided above.
Sign and write the date of examination in the spaces provided above
Answer all questions in the spaces provided
This paper consists of 7 printed pages
Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing
Candidates should answer questions in English

For Examiners Use Only

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
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GRAND TOTAL

How does nutrition differ in plants and animals?

(2marks)

What is a hand lens? (1 mark)

list three precautions made during collection and observation of specimen.

(3mrks)

a) Distinguish between natural and acquired immunity. (2 marks)

b) What is the role of vaccination against certain diseases. (1 mark)

Identify the parts of the mammalian heart that plays the following roles

a) Prevents oxygenated blood from mixing with oxygenated blood. (1mark)

b) Secretes pericardial fluid. (1 mark)

c) Prevents valves from turning inside out. (1 mark)

One of the components of bile is a chemical left over from destruction of red blood cells

a) Identify the chemical substance. (1 mark)

b) What is the role of bile in digestion. (2 marks)

Explain why a fresh wound on the skin bleeds more on a hot sunny day than on a cold chilly day. (2 marks)

a) What is Respiratory Quotient (RQ)? (1 mark)

b) (i) Calculate the RQ of the food substance shown by the equation below.

$2C_{51}H_{98}O_6 + 145\ O_2 \longrightarrow 102CO_2 + 98H_2O + \text{Energy}$ (3 marks)

(ii) Name the food substance being oxidized in b (i) above. (1mark)

a) Give two characteristics of respiratory surfaces in animals. (2 marks)

b) State two ways in which the surface area of the fish filaments is increased for efficient gaseous exchange. (2 marks)

c) What is the importance of counter flow system in the filaments of a fish. (2 marks)

Explain the effects of the following on the quantity and composition of urine. (3 marks)

a) Drinking large amount of clean water

b) Drinking very salty soup

c) Removal of pancreas

What do you understand by the term eutrophication? (2 marks)

Give two uses of nuclear energy. (2marks)

a) List four differences between Mitosis and Meiosis. (4 marks)

b) Give two reasons why reproduction is important. (2 marks)

Below are photographs of plant taken at different times of the day.







Give a term for used to describe the nature of cells obtained from the plant at;

a) 6:00 am. (1 mark)

b) 12:00 pm. (1 mark)

Explain how mammalian trachea is adapted to its function. (4 marks)

State one functions of xylem tissue. (1 mark)

The table below gives information about some diseases. Fill in the missing gaps in the table. (4 marks)

| Disease | Type of organism causing the disease | Mode of transmission |
|---|---|---|
| 1. ---------- | *Plasmodium Spp.* | Bites by Anopheles mosquito |
| 2. Amoebiasis | --- | Ingestion |
| 3. Cholera | ---------- | Taking in contaminated food or water |
| 4. Typhoid | ---------- | Taking in contaminated food or water |

Name two classes of phylum Arthropoda with cephalothorax. (2 marks)

a) In which kingdom do bacteria belong? (1 mark)

b) Give any two benefits of bacteria to man. (2 marks)

a) What is asexual reproduction?

(1mark)

b) State **three** types of asexual reproduction. (3marks)

1. What do you understand by the term double fertilization? (2 marks)

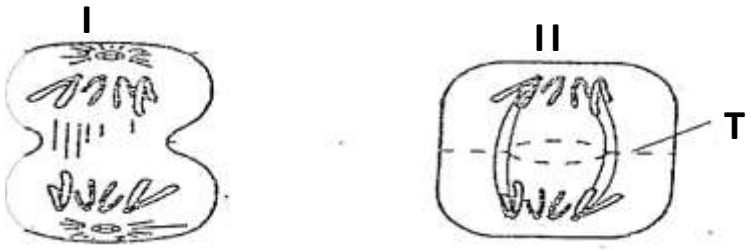
2. State three ways in which flowers prevent self-pollination. (3 marks)

3. Name the part of the flower in which pollen grains are formed. (1 mark)

4. Name two nuclei found in pollen grains. (2 marks)

5. Name three methods of fruits and seed dispersal. (3 marks)

6. The figure below represents cytoplasmic division in animal cell and plant cell.




a) Identify the phase of cell division. (1 mark)

b) i) Give two reasons that qualify I to be an animal cell. (2 marks)

ii)Name the structure labeled **T**. (1 mark)

7. Name the organelles that perform each of the following functions: (2 marks)

a) Digestion and destruction of worn out organelles:

b) Osmoregulation:

8. State **two** factors that affect active transport in plant roots. (2 marks)