**DARAJANI SECONDARY SCHOOL,**

**P.O. BOX 20-90129, NGWATA.**

**MID\_TERM 2, 2015\_ EXAMINATION**

**FORM 3**

**BIOLOGY PAPER 1**

**231/1**

**TIME: 2HRS**

**NAME…………………………………………………………………………………………ADM. NO……………….. CLASS:…………….**

1. State the organelle that would be abundant in:-
2. Palisade cell (1 mark)

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1. Skeletae muscle cell (1 mark)

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1. State any three theories that explain the mechanism of opening and closing of stomata. (3 marks)

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1. A student visiting a game park observed an adult elephant flapping its ears twice as much as its calf in order to cool its body when it is hot. Explain. (2 marks)

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1. The figure below represent part of the nitrogen cycle in an ecosystem.

Nitrate ions in the soil

Nitrogen gas in the air

Nitrite ions in the soil

Ammonium ions in the soil

Proteins in plants

Proteins in animals

P

Q

R

S

1. State the name of the process P. (1 mark)

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1. State which type of organism carries out process P. (1 mark)

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1. State a natural process represented by Q. (1 mark)

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1. Name the organisms which carry out process R and S. (1 mark)

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1. How would excess pesticides in the soil interfere with process Q? (1 mark)

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1. State two ways in which respiratory surfaces are suited to their function. (2 marks)

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1. State two ways in which ileum is structurally adapted to the absorption of food. (2 marks)

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1. (a) State the organisms that cause the following diseases:-
2. Cholera (1 mark)

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1. Amoebic dysentry (1 mark)

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(b) Name a disease in human that is caused by plasmodium falciparum. (1 mark)

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1. The chart below show a feeding in a certain ecosystem.

Green plants

Grasshopper

Lizard

Snakes

Hawks

Domestic cats

Mice

1. Construct two food chains ending with a tertiary consumer. (2 marks)

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1. Which organisms have the highest variety of predators in the food web? (2 marks)

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1. Suggest one way in which ecosystem would be affected if there was a prolonged drought. (1 mark)

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1. Industrial waste may contain metallic pollutants. State how such pollutants may indirectly reach and accumulate in the human body, if the waste were dumped into rivers. (3 marks)

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1. Name the blood vessels that transports blood from:
2. Small intestines to the liver. (1 mark)

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1. Heart to the kidney. (1 mark)

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1. Heart to the lungs. (1 mark)

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1. (a) Explain a person discharges urine more frequently when environment temperatures are lower than they are high. ( 3 marks)

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(b) Name the nitrogenous waste excreted by a fresh water fish. (1 mark)

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1. Study the diagram below and answer the question that follow:
2. Identify the structure labelled A and B. (2 marks)

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1. What process takes place in the part labelled A and B. (2 marks)

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1. List the mode of expressing food relationship in an ecological system. (3 marks)

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1. Explain how sunken stomata lower the rate of transport in plants. (2 marks)

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1. The oxidation of a certain substrate is represented by the chemical equation shown below.

C57H104O6 + 80O2 57CO2 + Energy

1. Calculate the respiratory quotient (RQ) of the substrate. (2 marks)

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1. Identify the substrate. (1 mark)

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1. Other than using the quadrant method, state two other methods of estimating population of nut grass. (2 marks)

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1. The diagram below represents an experiment that was set up to investigate a certain process.
2. Name the process that was being investigated. (1 mark)

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1. Account for the swelling in diagram 2. (2 marks)

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1. Ascaris lumbricoides is an example of an endo-parasite.
2. State the habitat of the organism. (1 mark)

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1. State two ways in which the organism is adapted to living in its habitat. (2 marks)

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1. Distinguish between:-
2. Biomass and carrying capacity. (2 marks)

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1. Interspecific and intraspecific competition. (2 marks)

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1. (a) Name a disease of the liver whose symptoms is jaundite. (1 mark)

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(b) Other than storage of blood and glycogen, name two other homeostatic function of liver. (2 marks)

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1. Study the classification illustrated below and answer the questions that follow.

Phylum R

Aves

Pisces

S

T

Amphibian

1. Name the: (3 marks)

Phylum R \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class S \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class T \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two general characteristics of members of phylum R. (2 marks)

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1. State three effects of dumping untreated sewage into the river. (3 marks)

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1. Explain how the following factors control population.
2. Predation. ( 2 marks)

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1. Competition (2 marks)

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1. Parasitism (2 marks)

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1. Name the hormones responsible for:
2. Osmoregulation (1 mark)

…………………………………………………………………………………………………………………………………………………

1. Reabsorption of mineral salts. (1 mark)

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1. State two features of leaves which enable a plant to reduce the loss of water. (2 marks)

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1. State two adaptations of xerophytes to their habitats. (2 marks)

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