**DARAJANI BOYS’ HIGH SCHOOL,**

P.O BOX 20-90129, NGWATA.

**School Motto:** “**Knowledge is Liberty, Ignorance is Fatal**”.

**END OF YEAR EXAMINATION, 2015**

**FORM 2,**

**BIOLOGY,**

**TIME: 2 HRS**

NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ADM.NO\_\_\_\_\_\_\_\_\_\_\_CLASS\_\_\_\_\_\_

1. Name the organelles which perform the following functions:-
2. Protein synthesis. (1 mark)

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1. Production of secretions. (1 mark)

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1. The following diagram represent a generalized animal cell as seen under a light microscope.
2. Name the parts labelled A, B and C. (3 marks)

A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Draw and label three structures on the diagram that would make this cell appear like a typical plant cell. (3 marks)
2. Skeletal muscle cells are known to have abundant mitochondria with well- developed cristae. Of what functional significance is this? (2 marks)

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1. Briefly explain the factors that affect the rate of diffusion. (6 marks)

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1. Name the elements that are present in all proteins. (2 marks)

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1. (a) Name two products of the light reaction stage of photosynthesis. (2 marks)

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(b) Give a reason why roughage in a diet is important. (1 mark)

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1. (a) Define transport in organisms. (2 marks)

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(b) State three significance of transport in plants and animals. (3 marks)

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1. The diagram below represents a flow chart of the blood clotting mechanism in a human being.

Name (a) The enzymes represented by:

1. Letter T. (1 mark)

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1. Letter S (1 mark)

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1. Metallic ion x. (1 mark)

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(b) The final product of mechanism represented by letter R. (1 mark)

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1. The diagram below is a simplified diagram of the cells in a dicotyledonous root.
2. Name the cells represented by:

A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1 mark)

B \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1 mark)

C \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1 mark)

1. Using arrow heads, indicate the directions of water movement from the soil to the part C. (2 marks)
2. State two ways in which part C is adapted to its function. (2 marks)

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1. Other than sexual intercourse, name other ways by which HIV/AIDs is spread. (3 marks)

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1. State the suitable apparatus used to:-
2. Flying insects. (1 mark)

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1. Crawling stinging insects. (1 mark)

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1. Small animals from tree barks. (1 mark)
2. (a) What is meant by the term gaseous exchange? (2 marks)

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(b) Name the gaseous exchanged. (2 marks)

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1. In plants, guard cells and aerenchyma tissues are important structures. Explain. (3 marks)

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1. Explain the significance of gaseous exchange in organism. (3 marks)

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1. Explain why the wall of the left ventricle of the mammalian heart is thicker than that of the right ventricle. (2 marks)

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1. Using an illustration, describe the mechanisms of gaseous exchange in an amoeba cell. (3 marks)

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1. (a) State the role of enzyme catalase in living cells. (2 marks)

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(b) Which factors inactivate enzyme action? (3 marks)

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

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(b) List three diseases that are effectively controlled through vaccination. (3 marks)

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(c) State two roles of vaccination. (2 marks)

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1. In a blood test, a few drops of antiserum were added to two samples of blood. No agglutination occurred. What were the blood groups of the two samples? (2 marks)

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1. (a) State two functions of the mammalian blood other than transport of substances. (2 marks)

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(b) State any two adaptations of red blood cells to their functions. (2 marks)

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1. (a) Name the structures used for gaseous exchange in the following organisms:- (5 marks)

**Organism** **Structure**

Amoeba \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Frog \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Insect \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Fish \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Human \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (b) State two features which respiratory surfaces of insects and mammals have in common. (2 marks)

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1. (a) Name the carbohydrate that is:-
2. Stored in plant seeds. (1 mark)

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1. Stored in mammalian muscles. (1 mark)

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1. Most abundant in human blood. (1 mark)

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(b) State the main functions of carbohydrates in living organisms. (2 marks)

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1. (a) Define the term photosynthesis. (2 marks)

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(b) State two requirements and their sources for the process of photosynthesis to occur. (2 marks)

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(c) Illustrate by means of a simple labelled diagram the structure of a chloroplast. (4 marks)

1. State three properties of disaccharides. (3 marks)

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1. State on property of enzyme. (1 mark)

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