**NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ADM/NO\_\_\_\_\_\_\_\_\_\_\_**

**DATE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ FORM\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**BIOLOGY**

**TERM TWO 2016**

**FORM F2**

**TIME:**

**HOLA SECONDARY SCHOOL**

**MID TERM EXAMINATION**

****

**INSTRUCTIONS: Answer all questions.**

1. State the use of the following apparatus in collection of specimens. (2mks)
2. Bait trap
3. Pooter
4. Give 3 reasons why classification is important. (3mks)
5. List two major characteristics of members of the same species. (2mks)

4a) State two functions of the centriole. (2mks)

b) Which organelles would be abundant in (2mks)

i) Skeletal muscle

ii) Palisade tissue

1. State two factors which destroy the semi permeability of the cell membrane. (2mks)
2. A student measured the diameter of a mitochondrion on a photomicrograph whose magnification was X50 000 to be 1mm. What was the actual size of the mitochondrion in micrometers? (2mks)
3. Name parts of a light microscope which perform each of the following functions. (3mks)
4. Controlling the amount of light entering the specimen.
5. Magnifies the object.
6. Used for focusing image under low power.

8a) A student used a microscope with x40 objective lens and x5 eye piece lens. He observed 5cells in the field of view which had 2mm radius. Calculate area of field of view in micrometers. (2mks)

1. What is the average size of the cell in micrometers? (2mks)
2. State three differences between light micrometers? (2mks)
3. State three differences between light microscope and electron microscope. (3mks)
4. What is the function of vascular bundles in plant nutrition? (3mks)
5. The diagram below illustrate the behavior of blood cells placed in two different solutions.

 Solution X Solution Y

 Process A Process B

1. Suggest the nature of solution x and y.
2. Name the processes represented by A and B.
3. Give three properties of a cell membrane.(3mks)
4. Describe what happens during the light stage of photosynthesis. (3mks)
5. Damage to the mammalian liver may lead to indigestion of fats. Explain the observation. (3mks)

15a) Suggest the role of each of the following substances present in saliva during food digestion. (3mks)

1. mucus
2. water

1. amylase

b) State one major function of ileum. (1mk)

1. The graph below shows the effect of pH on the rate of activity of a digestive enzyme found in human.

 pH

1. What is the optimum pH for the enzyme? (1mk)
2. Name the part of the alimentary canal the enzyme would be active. (1mk)

16a) What is the optimum pH for the enzyme? (1mk)

b) Name the part of the alimentary canal the enzyme would be active. (1mk)

c) Suggest the name of the enzyme. (1mk)

1. Name three components of gastric juice. (3mks)
2. Name any two types of polysaccharides found in plants. (2mks)

19a) Distinguish between transpiration and guttation. (2mks)

b) State the structure through which each of the process named in (a) above occurs.

1. What causes ‘biological’ wilding in plants? (1mk)

20. Why would burning charcoal in a poorly

a) Ventilated room cause death? (2mks)

1. Why are there no blood clots on normal blood vessels? (1mk)

21) Complete the table below showing blood transfusion, tick ( ) means no agglutination, cross(x) means agglutination. (4mks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | A | B | AB | O |
| A |  |  |  |  |
| B | x |  |  |  |
| AB |  |  |  |  |
| O | x | x |  |  |

22. Give two forms in which carbon (Iv) oxide is transported in human blood. (2mks)

1. Name the enzyme that enhances the loading off loading of carbon (IV) oxide in the human blood. (1mk)

23. The diagram below represents part of the mammalian blood circulatory system.

1. Name the blood vessels labeled A and B
2. Which of the blood vessels will have the highest sugar concentration under the following conditions.
3. After - heavy meal
4. during fasting.