**NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ADM NO.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**BIOLOGY FORM 1**

**2 Hours**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ SECONDARY SCHOOL**

**END OF TERM EXAMINATION**

**TERM II 2019**

**Instructions to Candidates**

* **Write your Name and Admission Number in the Spaces Provided.**
* **Answer all the questions in the spaces provided.**

**For Examiner’s Use Only**

|  |  |  |
| --- | --- | --- |
| **QUESTIONS** | **MAXIMUM SCORE** | **CANDIDATES SCORE** |
| **1 – 18** | **100** |  |

1. State the function of each of the following organelles. (3mks)
2. Lysosomes

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1. Golgi apparatus

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1. Chloroplasts

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1. The diagram below represents a cell



1. (i) Is it an animal or a plant cell?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1mk)

(ii) Give a reason for your anser in (i) above. (1mk)

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1. Name the part labeled

X \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1mk)

Y \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1mk)

1. Identify the parts of a light microscope which serve each of the functions described below:
2. Making rough focus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1mk)
3. Reflecting light from the source \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1mk)
4. The diagram below represents a set up that was used to investigate a certain process in a plant.



1. What aspect of photosynthesis wa being investigated? (1mk)

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1. i) Identify gas B \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1mk)

ii) How can gas B be tested? (1mk)

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1. State the importance of using sodium hydrogen carbonate in the set up. (1mk)

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1. Apart from sunlight state one other factor that is required to get a positive result. (1mk)

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1. Give two reasons why Elodea plant has been used instead of using any other terrestrial plant.

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1. a) State the most suitable biological tool for collecting the following organisms:
2. A moth from a coffee farm. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(1mk)
3. Ants from a tree trunk.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1mk)

 b) Apart from kingdoms plantae and Animalia name other three kingdoms. (3mks)

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1. An experiment was set up as shown below and left for 30 minutes



1. Name the physiological process that was being investigated (1mk)

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1. State the expected results. (1mk)

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1. Give a suitable explanation for the results in (b) above. (2mks)

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1. Bean plants are known as ‘PHASEOLUS VULGARIS’
2. Write the proper scientific name of the bean plant. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(1mk)
3. State the name given to this system of naming of living organisms. (1mk)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. a) Define the term diffusion (1mk)

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b) How do the following factors affect the rate of diffusion?

 i) Diffusion gradient

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 ii) Surface area to volume ratio

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 iii) Temperature

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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c) Outline three roles of active transport in human body. (3mks)

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1. a) Draw a well labeled diagram of a chloroplast. (5mks)

 b) State two adaptationsof a chloroplast (2mks)

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1. a) Explain what happens during the light stage of photosynthesis.(3mks)

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1. Distinguish between photosynthesis and chemosynthesis. (2mks)

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1. Explain why:
2. Red blood cells burst when placed in distilled water while plant cells remain intact. (2mks)

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1. Fresh water protozoa like amoeba do not burst when placed in distilled water. (2mks)

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1. The table below shows the concentration of sodium and iodine ions in pond water and in cell sap of an aquatic plant.

|  |  |  |
| --- | --- | --- |
| Ion | Concentration in pond water (ppm) | Concentration in cell sap (ppm) |
| Sodium | 120 | 70 |
| Iodine | 0.2 | 400 |

1. (i) suggest the process by which each of the following ions are taken up by the plant from from the pond water.

 Sodium \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1mk)

 Iodine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1mk)

1. (i) Which of the two ions would stop to be taken up by the plant if the soil became waterlogged? (1mk)

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(ii) Explain your answer in question (i) above. (1mk)

1. a) Differentiate between an organ and an organ system. (2mks)

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1. Identify the following specialized cells and give their functions.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Cell | Identity | Function  |
| i | C:\Users\BIDAN\Pictures\2017-07-07\004.jpg |  |  |
| ii | C:\Users\BIDAN\Pictures\2017-07-07\004.jpg |  |  |
| iii | C:\Users\BIDAN\Pictures\2017-07-07\004.jpg |  |  |

1. State three characteristics of a cell membrane. (3mks)

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1. With refrence to plant, complete the table below by filling in column II the name fo the cell organelle that corresponds with the statement in column I. (5mks)

|  |  |
| --- | --- |
| Column I | Column II |
| i) Contains pigment that traps solar energy |  |
| ii)Acts as a selective barrier between cell and its sorrounding |  |
| iii) is composed of a high molecular polysaccharide called cellulose |  |
| iv) Contains enzymes responsiblefor synthesis of most cellular ATP |  |
| v) Contains most cellular solutes. |  |

1. State the importance of the following characteristics of living things
2. Respiration

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1. Reproduction

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1. Locomotion

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1. a) explain why osmosis is referred to as ‘specialized diffusion’ (1mk)

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b) Differentiate between the following

 i) Taxon and Taxonomy (2mks)

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 ii) Heterotrophic nutrition and autotrophic nutrition. (2mks)

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iii) Osmotic pressure and osmotic potential (2mks)

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iv) Hypotonic solution and hypertonic solution in relation to a cell. (2mks)

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1. Fill in the blank spaces:

“When a plant cell is placed in a hypotonic solution it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ water by osmosis to become \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ while when red blood cells are placed in a hypertonic solution they become \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ water (4mks)