2024 SHS2 END OF SEMESTER EXAMS – BIOLOGY 2

BIOLOGY

PAPER 2

Essay

70marks

Answer **three** questions in **all**

Do **not start** until you are told to do so. Write your **name** and **class** in **ink** in the spaces above.

Answer **two** questions from part 1 and **all** questions in part 2

Part 1 [40mks]

Answer only **two** questions

1. (a). Explain briefly the following terms and give **one** example each

i. Proakaryotic cell

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.....

.....

ii. Eukaryotic cell

.....

.....

iii. Eukaryote

.....

.....[**9mks]**

(b). i. Explain the term 'tissue'

.....

..... **2mks**

ii. Mention t**hree** examples of tissues in

α. plants

.....

.....

β. animal

.....

.....6mks

iii. select **four** among the following organisms/organs and form the **levels** of organization with them;

I mango leaf, **II** onion, **III** paramecium, **IV** spider and **V** hydra

.....

..... **3mks**

2. (a). i. Distinguish between the terms; *organelle* and *organ*

.....

.....

.....

.....3mks

ii. Give the **shape** of each of the following organelles;

α. Chloroplast .....

β. Golgi body .....

γ. Lysosome .....

δ. Centriole **4mks**

(b**)** i. define the term *cell* .....

.....

..... .[2mks]

ii. Explain **briefly** how the following scientists contributed to cell discovery

α. Robert Hooke

.....

..... [2mks]

β. Antonnie van Leuwoenhoek

.....

.....

.....

.....

....[2mks]

γ. Matthias Schleiden

.....

.....

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.....[2mks]

(c) mention

i. **three** (3) features that make Amoeba able to survive in its habitat.

.....

.....

.....

.....[3mks]

ii. **two** advantages of Amoeba at the cellular level to a Frog at the complex level

.....

..... .[2mks]

3. (a.) i. define the term *nutrition*

.....

.....

.....*[2mks]*

ii. describe the following types of organisms and give **one** example **each;**

k. Carnivorous plants

.....

.....

l. Decomposers

.....

.....

m. Scavengers

.....

.....

n. Detritivores

.....

.....

o. Carrions

.....

..... 15mks

(b). Last Monday, during second break, the science students could no longer sit in their class due to a heavy urea smell from the urinal close to them.

i. Name the physiological process that took place above phenomenon

.....1mk

ii. Explain briefly how the physiological process named above occurred

.....

.....

.....

.....2mks

4. a. Explain the following terms as used in the classification of living things;

i. Key

.....

.....**2mks**

ii. species

.....

..... **2mks**

iii. name the **two** types of keys used in biological classifications

.....

..... **2mks**

b. i. distinguish between **'the family'** as a rank in the classification of organisms and **'the family'** as a social group.

.....

.....

.....2mks

c. Explain the following terms;

i. *Osmosis*

.....

.....

..... 2mks

ii. *Endocytosis*

.....

.....

.....2mks

iii. *Pinocytosis*

.....

.....

.....2mks

iv. Flaccidity

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.....3mk.

d. i. define organ system

.....

.....2mks

ii. give **on**e example of an organ system in plants

.....1mks

Part 2 **[30mks]**

Answer **all** questions

5. **(a)** Name the **kingdoms** to which each of the following organisms belong

I virus **II** euglena **III** Rhizopus

IV moss **V** spirogyra **VI** crabs **VII** Hydra

VIII pawpaw seed **IX** cactus **X** bacteria

...I.....II.....III.....

.....IV.....V.....

.....VI.....VII.....VIII...

.....IX.....X.....

5 mks

(b) i. explain the term **binomial system of nomenclature**

.....

.....

..... **2mks**

ii. write the **species** for the following organisms using the binomial system;

α. Mango.....

β. Domestic dog.....**2mks**

c. Name **fo**ur types of

i. *epithelial* tissues in animals

.....

.....

.....4mks

ii. **two** examples of **proteins** synthesized in the body of man

.....

.....

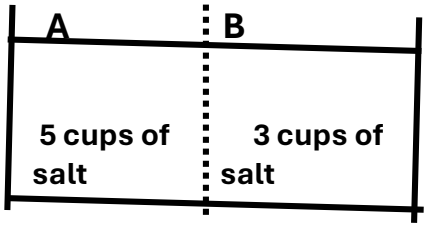
.....2mks

d. i. Explain the term *concentration gradient*

.....

.....2mks

ii *Study the following solutions with their concentrations carefully and answer the rest of the questions that follow. Volume water is* $50cm^3$ in all



α. Which solution has more osmotic pressure?

..... 1mk

Give **one** reason

.....1mk

β. Which solution has more water potential? 1mk

Give one reason..... 1mk

γ. Which solution has more solute relative to solvent?

....1mk

δ. Which direction is net movement of water molecules?

..... 1mk

f. Name

i. **Two** plant-like features of Euglena

.....

.....

.....**2mks**

ii. **Three** animal–like features

.....

.....**3mks**

iii. **three** features that make Euglena more advanced than paramecium

.....

.....

.....**3mks**