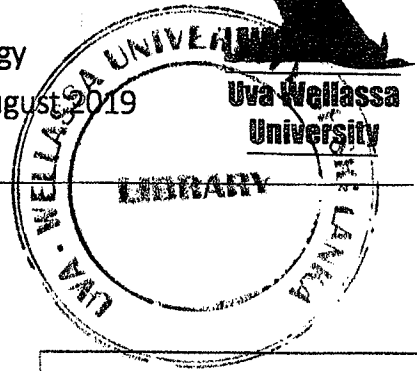


0074



Instructions to candidates

Duration: 01 (One) hour

Number of questions: Five-(05) Structured Essay Questions

Answer **all the questions**

Mark allocation: 100

Index No.

1.

a. What is the main area explained by the following fields of Biology?

Microbiology:

Zoology:

Botany :

(3 mark)

b. Briefly explain the following relationships of organisms.

Mutualism:

.....

Parasitism:

.....

(3 mark)

c. List two (02) sources of energy used by organisms.

.....

.....

(2 mark)

d. Give an example for sensitivity shown by living organisms.

.....

(1 mark)

e. Complete the following sentences.

- i. Increase in dry weight or volume of an organism is called
- ii. Individuals produced from a single parent without genetic mixing is called
..... reproduction
- iii. Removal of metabolic waste products from the body is called
- iv. Green plants show nutrition.

(4 mark)

f. Give two (02) properties of water which makes it an important biological component.

- i.
- ii.

(2 mark)

2.

a. List three (03) biological macromolecules found in living organisms.

- i.
- ii.
- iii.

(6 mark)

b. State the three (03) main classes of carbohydrates.

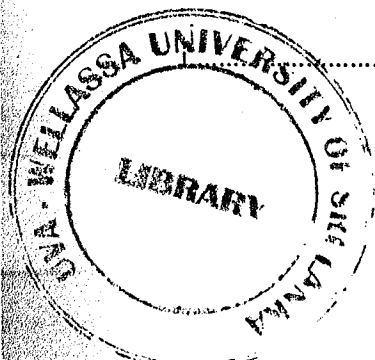
- i.
- ii.
- iii.

(3 mark)

c. You can classify carbohydrates according to their functional groups. What are those two (02) groups?

- i.
- ii.

(2 mark)



d. i.. Fill in the blanks.

Proteins are made out of monomers called which are covalently connected by bonds. The three (03) dimensional structure of protein is explained by its structure.

(3 mark)

ii.. List two (02) agents that cause denaturation of proteins.

.....
.....

(4 mark)

e. List two (02) types of nucleic acids found in living organisms.

i..... ii.....

(2 mark)

3.

a. What is the main difference between a prokaryotic cell and an eukaryotic cell?

.....
.....

(4 mark)

b. What are the three (03) major features of a plant cell which distinguishes it from an animal cell?

.....
.....
.....

(6 mark)



c. What is the main function of mitochondria in an eukaryotic cell?

.....

(2 mark)

d. Name three (03) cellular organelles found in an animal cell other than mitochondria.

i.....

ii.....

iii.....

(3 mark)

4.

a. What is cell division?

.....

.....

.....

(4 mark)

b. Name two (02) major types of cell divisions.

i..... ii.....

(4 mark)

c. List three (03) benefits of cell division.

i.....

ii.....

iii.....

(3 mark)

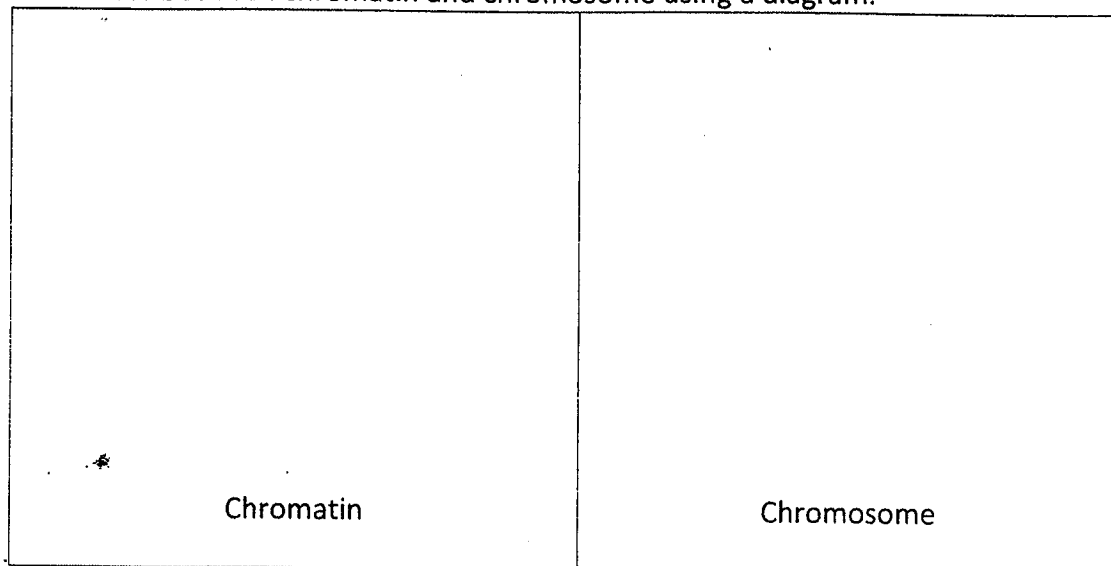


d. What is a chromosome?

.....
.....

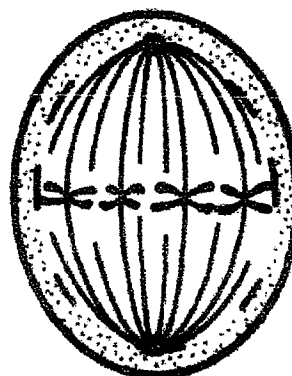
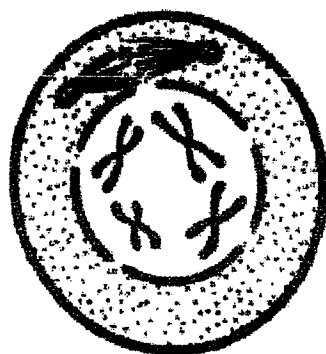
(2 mark)

e. Show differences between chromatin and chromosome using a diagram.

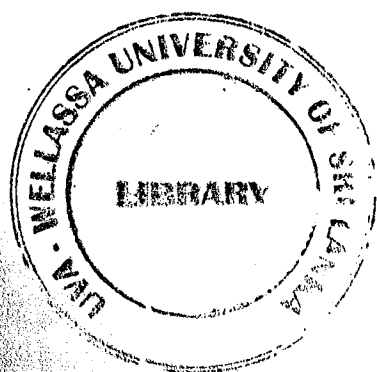


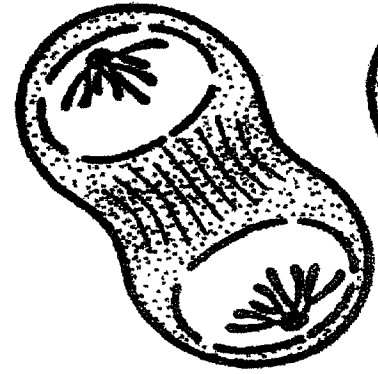
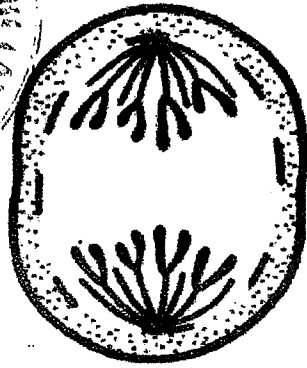
(4 mark)

f. Identify following stages of mitosis cell division.



.....





.....

(8 mark)

5.

a. Give examples for following ecological levels of organizations.

i. Organism

.....

ii. Population

.....

iii. Community

.....

iv. Ecosystem

.....

(8 mark)

b. Define a population.

.....

.....

.....

.....

(4 mark)

c. What are the factors effect for population growth?

.....

.....

.....

.....

(4 mark)

d. Write an equation to show the population growth by using the factors mentioned in above c.

(4 mark)

e. Calculate the chicken growth rate of a farm by considering following hypothetical data. Chicken count in 1st of January 2016 is 1872. Chicken sell in each month of 2016 are 150,200,200,280,150,159,287,278,169,100,148,179. Dead chicken because of an illnesses in 2016 is 28. Number of hatched eggs in this farm for the same year counted as 1100.



5 mark)