

FORM FIVE MONTHLY TEST MARCH, 2020

BIOLOGY 1

TIME: 2½ HOURS

INSTRUCTIONS

1. This paper consists of ten (10) questions in section A and B
2. Answer all questions from section A and only two (2) questions from section B
3. The marks allocation for each question is indicated at the beginning of each section
4. Write your full name in every page of your answer sheet.

SECTION A (70 MARKS)

Answer all questions from section A

1. (a) Students from Kigonsera Secondary School made an observation of the structures found within the leaf of bean plant, by using electron microscope. They observed the structure stained green colour and larger than the rest.
 - (i) Give the name of structures which were observed in a cell
 - (ii) State the main role of the structures observed in a cell
 - (iii) Account for the colour of the structures named in 1a(i) above
 - (iv) Draw the well labeled diagram of the specimen observed.

(b) State four roles of plant cell vacuole
2. (a) Carbohydrate has both structural and storage functions in plants explain with the aid of four points
- (b) A form five students carried a biochemical test to identify the food substance from a food sample B.B. They took about 2Cm of the food sample BB into a clean and dry test tube. The food sample turned into blue black coloration on the addition of saliva, the blue black colour disappeared for about 10 minutes

Question

- (i) Name the food sample contained in BB
 - (ii) What was the role of iodine in the experiment?
 - (iii) Why the solution of food sample BB decolourised from blue black. on the addition of saliva.
 - (iv) Explain the metabolism of excess food sample BB in human body.
- (b) State four properties of lipids

3. (a) With the aid of three reasons explain why the traditional equation of photosynthesis was discarded? hence the modern equation of photosynthesis
(b) Explain five internal factors affecting photosynthesis in maize plant
4. (a) What is nutrition?
(b) Explain the process of digestion at duodenum the main site of digestion
5. (a) Differentiate between action potential and resting potential as applied to nervous system
(b) State five functions of synapse and hence draw the structure of labeled synapse
6. (a) What is enzyme?
(b) Describe how temperature and substrate concentration affect enzyme controlled reaction
7. (a) Write the scientific name of human being
(b) State four rules used to write scientific name of human being in 7(a) above.
8. (a) Explain the following stages of glycolysis in human being
 - (i) Phosphorylation of sugar
 - (ii) Lysis of sugar
 - (iii) Oxidation by dehydrogenation
 (b) (i) Aerobic respiration produces large amount of energy compared to anaerobic respiration?
Give reason
(ii) state five adaptations of mountain dwellers to growth promoters
9. (a) State one role of the plant growth hormones inhibitors to plant.
(b) Explain five commercial application of plant growth promoters
10. Differentiate between the following
 - (a) Positive feedback and negative feedback mechanism
 - (b) Hormonal and nervous coordination
 - (c) Rods and cones
 - (d) Cholinergic and adrenergic synapse