

Name.....Class.....Adm no.....

FOCUS A365

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FORM 1 BIOLOGY END YEAR EXAMINATIONS

TIME: 2 HOURS

INSTRUCTIONS

- Answer all questions in section A B and C in the spaces provided.

SECTION A (50 MARKS)

- Name the branch of Biology that deals with the study of
 - Microscopic organisms. (1 mark)
 - Fungi. (1 mark)
 - (a) Name the kingdom into which the prokaryotes are placed. (1 mark)
 - State the functions of the following cell organelles.
 - Nucleolus. (1 mark)
 - Centriole. (1 mark)
 - Give **three** factors that determine the amount of energy a human being require in a day. (3 marks)
- Give a reason why staining is important when preparing specimen for observation by use of light microscope. (1 mark)
- Name the cell organelles that:- (3 marks)
 - Produce Lysosomes
 - Contain chromosomes
 - Selectively control movement of substances in and out of the cell.
 - a) A student from Kegonga used a microscope with X40 objective lens and X5 eye piece lens which had 2mm radius and counted 5 cells. Calculate the area of the field of view in micrometers (2 marks)

- b) What is the average size of the cell in micrometers? (1 mark)
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7. (a) Define 'osmosis'. (2 marks)
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- (b) State two importance of osmosis in plants. (2 marks)
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8. A biological washing detergent contains enzymes which remove stains like mucus and oils from clothes which are soaked in water with the detergent.
- (a) Name the two groups of enzymes that are present in the detergent. (2 marks)
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- b) Why would the stains be removed faster with the detergent in water at 35°C rather than at 15°C? (2 marks)
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9. What is binomial nomenclature? (2 marks)
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10. State the importance of the following in a living organism
- (a) Locomotion (1mark)
-
-
- (b) Respiration (1mark)
-
-
10. Name the cell organelles which would be abundant in (2marks)
- (a) Sperm cell
-
-
- (b) Pancrease
-
-
11. State three properties of proteins. (3marks)
-
-
-
12. What is the role of light energy during photosynthesis (2marks)
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13. a) Name the part of an organelle where the following occur;
- i) Carbon IV oxide fixation (1 mark)
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- ii) Photolysis of water (1 mark)
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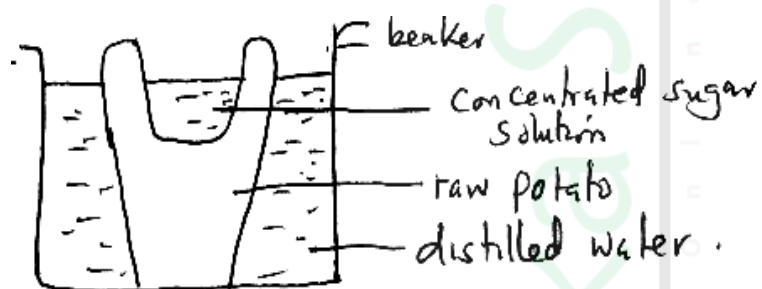
b) State two functions of light in the process of photosynthesis. (2 marks)

14. a) State two roles of irritability in living organisms (2 marks)

b) Identify a suitable equipment that is used in collecting
i) Small crawling organisms (1 mark)

ii) Flying insects (1 mark)

15. The diagram below represents a set-up to investigate a certain physiological process.



After some time the level of sugar solution was observed to have risen.

a) What physiological process was being investigated? (1 mark)

b) Account for the rise in the level of sugar solution. (4 marks)

c) Suggest the result that would be observed if the experiment was repeated using a piece of boiled potato. (1 mark)

d) Define the following terms
i) Crenation (1 mark)

ii) Turgidity (1 mark)

SECTION B (40 MARKS)

16. a) Name an enzyme that is found in the saliva of man and state its function. (2 marks)

b) Give the function of the following organs in digestion. (2 marks)

i) The Tongue

ii) The oesophagus

17. State the PH in the following part of the digestive system. (3 marks)

i) Mouth

ii) Stomach

iii) Duodenum

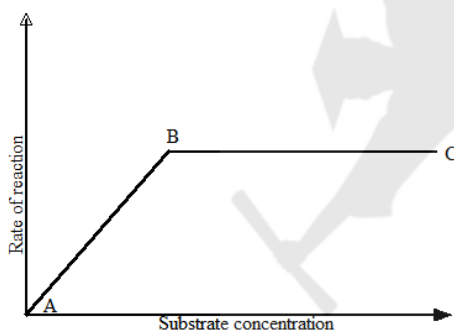
18. Define the term assimilation. (1 mark)

19. State the importance of diffusion in animals. (3 marks)

20. State **two** functions of saliva. (2 marks)

21. Describe what happens during the light stage of photosynthesis. (3 marks)

22. The graph below shows the effect of substrate concentration on the rate of enzyme controlled reaction.



(a) Account for the shape of the graph between B and C. (2 marks)

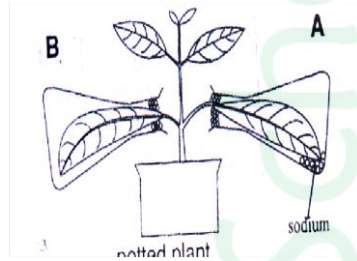
(b) State **two** other factors that affect the rate of enzyme reaction.

(2 marks)

23. State **three** roles of active transport in the human body.

(3 marks)

24. A student set up an experiment as shown below. Study the set-up and then answer the questions that follow.



Before setting the experiment, the potted plant was kept in darkness over night.

(a) Explain the importance of keeping the plant over night before the experiment.

(1 mark)

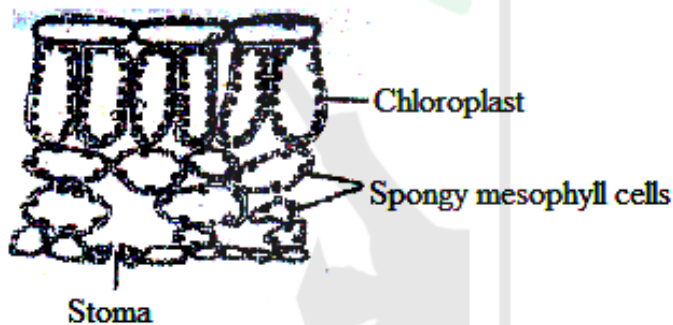
(b) What was the role of sodium hydroxide in the experiment?

(1 mark)

(c) What were the expected results at the end of the experiment?

(2 marks)

26. (a) The figure below shows a section through a leaf. A leaf is designed for photosynthesis and this process provides a supply of simple sugars for a plant.



(i) State the function of the chloroplasts in photosynthesis.

(1 mark)

(ii) Explain the advantage of the distribution of the chloroplasts as shown in the figure above.

(2 marks)

(iii) Suggest the function of the stomata and the spaces between spongy mesophyll cells in the process of photosynthesis.

(1 mark)

(b) (i) Name the tissue that transports the sugars made by photosynthesis to other parts of the plant. (1 mark)

(ii) Name the mineral ion that is used to form proteins. (1 mark)

27. a) Name one element found in proteins but not in carbohydrates. (1 mark)

b) State TWO functional roles of proteins in the body. (2 marks)

28. a) Name the components of the enamel of teeth. (2 marks)

b) Name the diseases of the teeth characteristics by:

i) Formation of cavities in the teeth. (1 mark)

ii) Gums becoming soft and flabby and bleeding of the gums occur. (1 mark)

SECTION C (10 MARKS)

29. Describe digestion of food in the stomach (10 marks)