

FORM 4 TERM 3 APRIL 2022 BIOLOGY PAPER 1

1. Name the part of a flower that develops into:

[i] Seed

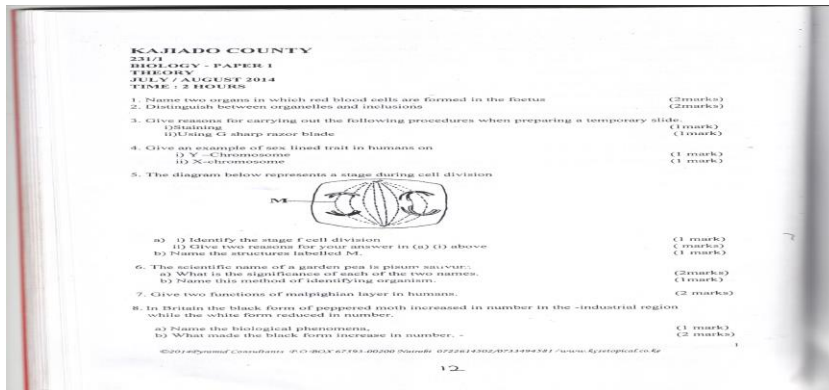
[1mk]

[ii] Fruit

[1mk]

2. State two ways in which floating leaves of aquatic plants are adapted to gaseous exchange. [2mk]

3. The diagram below represents a stage during cell division



[a] [i] Identify the stage of cell division

[1mk]

[ii] Give two reasons for your answer in [a] [i] above

[2mk]

[b] Name the structures labeled M [1mk]

[b] Name the class to which millipede belongs [1mk]

4[a] Distinguish between the terms [2mk]

Homodont and heterodont

[b]what is the function of the carnassial teeth [2mk]

5. An A blood group patient involved in a road accident required an urgent blood transfusion. His relatives were invited to donate blood.

[a]Name the possible relative who would not donate blood to him [2mk]

[b]State why the others would not be in a position to donate blood to him [2mk]

6. The flow chart shows a part of a food relationship in an ecosystem



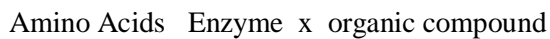
[a][i] Name the food relationship shown [1mk]

[ii] How many trophic levels are shown in the diagram [1mk]

[b] What is the main source of energy in the ecosystem [1mk]

7. Name the only epidermal cell in plants that contain chloroplast [1mk]

8. The equation below represents a metabolic process that occurs in the mammalian lives



[a] Name the process that represents the above equation [1mk]

[b] Identify the enzyme represented by x [1mk]

[c] What is the importance of the process to the mammal [1mk]

9. [a] Name the carbohydrate that is stored in mammalian muscle [1mk]

[b] What name is used to describe removal of indigestible and undigested food material from the alimentary canal [1mk]

10.[a]Carl Linnaeus developed the taxonomic units of classification

[i]What is taxonomy [1mk]

[ii]Why was the system of classification by Carl Linnaeus described as natural system of classification [2mk]

11. Phagocytes also called granulocytes or polymorphs are cells found in the blood whose they ingest pathogens and cell debris

[i]why are they called polymorphs. [1mk]

[ii]Name the cell organelle most abundant in phagocytes to enable them function effectively [1mk]

12. Name the:

[a] Material that strengthens xylem tissue [1mk]

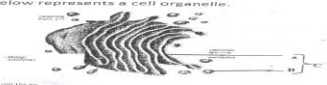
[b]Tissue that is removed when the part of a plant is ringed [1mk]

13. The diagram below represents a cell organelle.

NAME..... ADM NO. CLASS.....
KERUGOYA GIRLS SECONDARY SCHOOL
BIOLOGY FORM TWO ENTRY EXAMS SEPTEMBER 2009
TIME:1HR

3. (a) Define the term resolution as used in microscopy. (1 mark)
The degree to which the details present in a specimen can be retained in the magnified image.

(b) The diagram below represents a cell organelle.



(i) State one function of this organelle. (1 mark)
Photosynthesis and transport of material or as an enzyme.

(ii) Name each of the parts labelled A and B. (2 marks)
A *Grain*
B *Grain Vein*

2. Name the parts of the chlorophyll molecule where:
(i) ATP is synthesized. (1 mark)
Grain
(ii) ATP is broken down into ADP and inorganic phosphate. (1 mark)
Grain

ANY ONE

[i]State the function of this organelle

[1mk]

[ii]Name each of the parts A and B

A

[1mk]

B

[1mk]

14. In which two ways do guard cells differ from other epidermal cells

[2mk]

15. Through cellular respiration, the chemical energy stored in glucose molecule is converted into which specific molecule

[3mk]

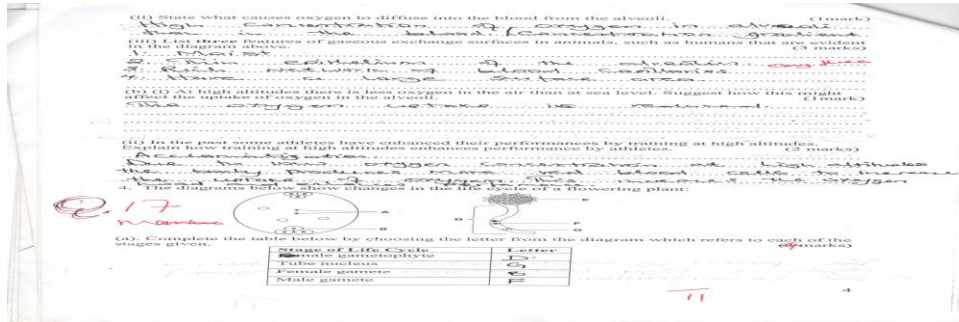
[b]Name the substance that speed up chemical reaction without being used up in those reactions

[1mk]

16. During germination and early growth, the dry weight of endosperm decreases while that of embryo increase explain

[2mk]

17. The diagrams below show changes in the life cycle of flowering plants



[i] Complete the table below by choosing the letters from the diagram which refers to each of the stages given [4mk]

STAGE OF LIFE CYCLE	LETTER
Male gametophyte	
Tube nucleus	
Female gamete	
Male gamete	

[1mk]

3 [a]. State 2 characteristics of kingdom Monera that are not found in other kingdoms [2mk]

19. State three ways by which plants compensate for lack of the ability to move from one place to another [3mk]

20. State three physiological processes that are involved in movements of substances across the cell membrane [3mk]

21. If the human pancreas is not functional:

[a] Name the hormone which will be deficient

[1mk]

[b] Name the disease the human is likely to suffer from

[1mk]

22. The oxidation state of a certain food is represented below by a chemical equation



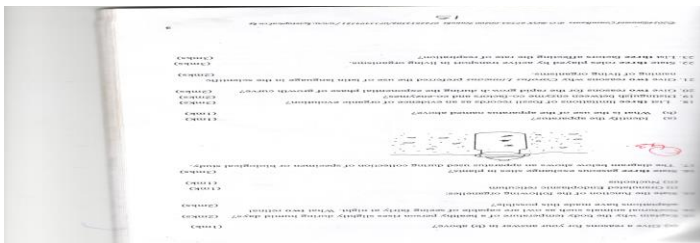
[a] Calculate the respiratory quotients[RQ] of the food substance

[2mk]

[b] Identify the food substrate

[1mk]

23. The diagram below shows an apparatus used during collection of specimen



[a] Identify the apparatus

[1mk]

- [b]What is the use of the apparatus named above [1mk]
24. State two factors in an ecosystem that affect the distribution of organisms [2mks]
25. A DNA strand has the following base sequence G C C T A G A T C A C
- What is the sequence of the
- [i] Complementary DNA strand [1mk]
- [ii] M-RNA strand copied from this DNA strand [1mk]
26. State three limitations of fossil records as evidence of organic evolution [3mk]
27. How does nutrition as a characteristic of living organism differ in plants and animals [2mk]
- 28.State the function of the following parts of a light microscope .
- [i] Body tube [1mk]
- [ii] Diaphragm [1mk]

29. State three characteristics of gaseous exchange surfaces

[3mk]

30. State two sources of variations

[2mk]