NAME: ……..... **SIGNATURE: …….**

MILLENIUM SCIENCE CAFE

S.3 BIOLOGY NOVEMBER ASSESSMENT TEST

TOPICS: NUTRITION & CELL DIVISION & GENETICS

TIME: 60 MINUTES INSTRUCTIONS: Attempt all questions.

1. ***(a)*** What you understand by the terms:

- ***(i)*** Continuous variation ***(01 mark)***
- ***(ii)*** Discontinuous variation ***(01 mark)***
- ***(iii)*** Meiosis ***(01 mark)***
- ***(iv)*** Mitosis ***(01 mark)***

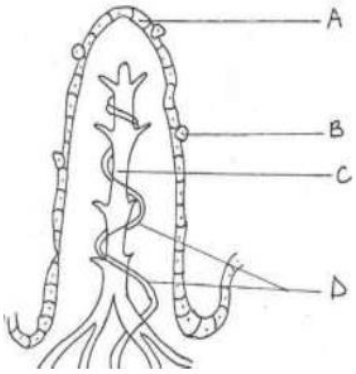
(b) Where do meiosis and mitosis occur? ***(02 marks)***

(c) Give two examples of characters which exhibit;

(i) Continuous variation ***(02 marks)***

(ii) Discontinuous variation ***(02 marks)***

2. The diagram below shows the structure of a villus. Use it to answer the question that follow.



(a) Name the parts labeled A-D (02 marks)

(b) What food substance enter (02 marks)

(i) A?

(ii) C?

(c) State two factors that make a villus an effective absorbing structure. (02 marks)

(d) Give the blood vessel into which structure b (i) carries its contents (01 mark)

(e) Which part of the alimentary canal has the highest number of the structure above? (01 mark)

(f) State four adaptations of the part of the alimentary canal in the figure above to its functions. (04 marks)

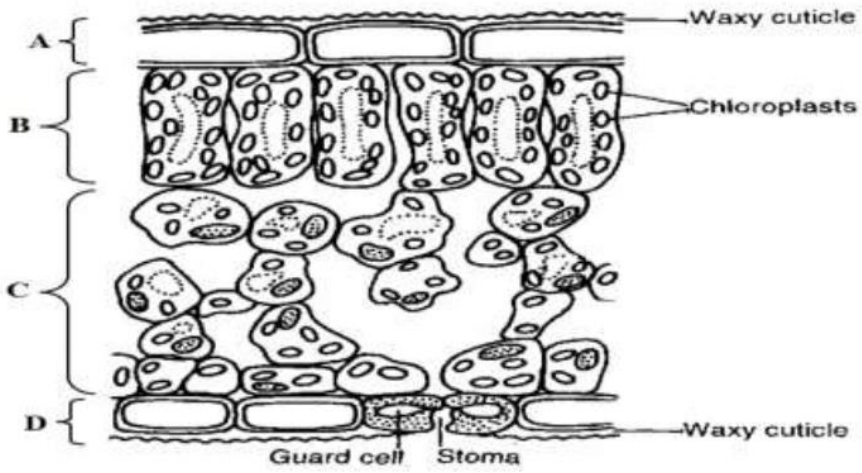
3. A plant with yellow leaves was crossed with a plant with green leaves. The gene for yellow leaves is recessive to that of green leaves. Using genetic symbols

(a) Show the possible genotypes and phenotypes of the F_1 offspring. ***(05 marks)***

(b) (i) What is the genetic ratio if F1 is selfed? Show your working. ***(05 marks)***

(ii) What is the phenotypic ratio of F2? ***(01 mark)***

4. The diagram below shows a cross section of a typical leaf



(a) Name the layer labeled A to D (02 marks)

(b) Which of these layers has the highest rate of photosynthesis? Give a reason for your answer. (02 marks)

(c) Give three differences between layers B and C. (put in a table) ***(03 marks)***

(d) Using evidence from the diagram, describe how the structure of a leaf is suited for photosynthesis. ***(04 marks)***

(e) What is the importance of wax on layer (a)? ***(01 mark)***

END!!!!

"What men have done, men can do"