

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY
ENTRY TEST FOR NON-SCHOOL LEAVERS: 2021
BIOLOGY

TIME ALLOWED:- 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Check that there are 10 different pages of this Examination Paper (including this front page).
2. This is a closed book examination; notes, textbooks and recording devices such as mobile phones are not allowed in the room
3. You have 10 minutes to read this Examination Paper.
4. This paper contains **fifty (50)** questions in two sections.
Section A consists of Multiple Choice Questions worth 50 marks.
Section B consists of true or false answer questions worth 18 marks.
Section C consists of Short Answer Questions worth 32 marks.
5. Answer **ALL** questions.
6. All answers must be written in this examination paper. No other materials will be accepted.
7. Marks will be awarded as indicated beside each question.

TOTAL

_____ /100

Complete the following Table now

Student Name	
Student number	
Examination Date	
Signature of Student	

DO NOT WRITE UNTIL YOU ARE TOLD TO START

QUESTION 7

Which of the following statement is **not** true of red blood cells

- A. They can engulf and kill bacteria cells in the body
- B. They are shaped like biconcave discs
- C. They do not have a nucleus
- D. They contain haemoglobin

QUESTION 8

Circulation of blood within the heart itself is called

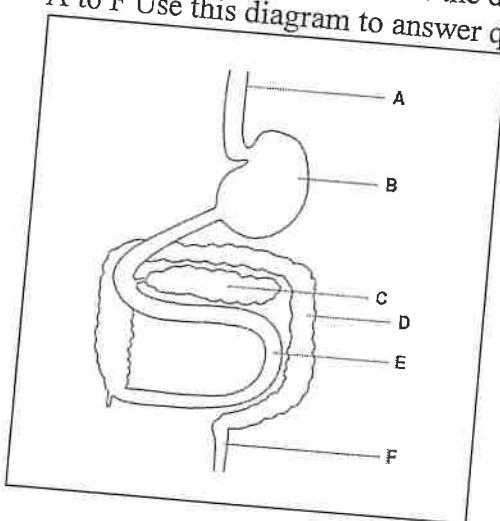
- A. Single circulation
- B. Double circulation
- C. Pulmonary circulation
- D. Systemic circulation

QUESTION 9

Which of the following organisms can eat food of plant origin but it is not a ruminant?

- A. Rabbit
- B. Cattle
- C. Sheep
- D. Goats

The diagram below represents the digestive system of human beings with the organs labelled A to F Use this diagram to answer questions 10 and 11

**QUESTION 10**

Give the letter (A-F) of the organ in which hydrochloric acid is produced _____

QUESTION 11

What is the name of the organ labelled C? _____

QUESTION 12

In which organ is human growth hormone produced?

- A. Pancreas
- B. Anterior pituitary
- C. Posterior pituitary
- D. Adrenal cortex

QUESTION 20

Which of the following is not a modification of leaves?

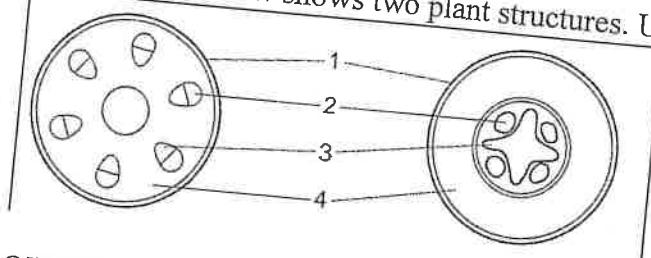
- Pneumatophores
- Tendrils
- Bracts
- Spines

QUESTION 21

Pollination is best defined as

- transfer of pollen from anther to stigma
- germination of pollen grains
- growth of pollen tube in ovule
- visiting flowers by insects

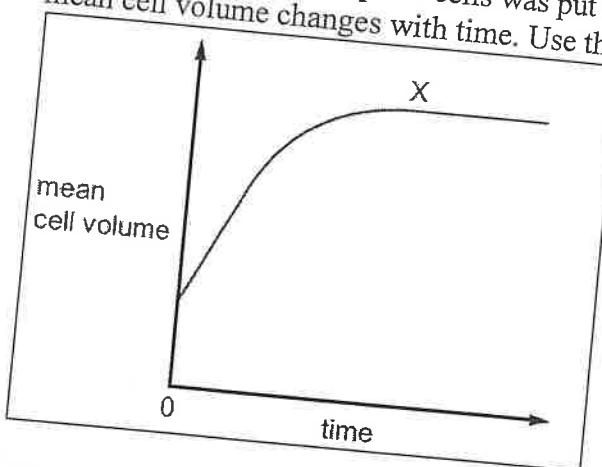
The diagram below shows two plant structures. Use this diagram to answer Question 22

**QUESTION 22**

Which row shows the correct labels?

	1	2	3	4
A	Cuticle	phloem	xylem	pith
B	Cuticle	xylem	phloem	cortex
C	epidermis	phloem	xylem	cortex
D	epidermis	xylem	phloem	pith

A tissue of plasmolysed plant cells was put into distilled water. The graph shows how the mean cell volume changes with time. Use this graph to answer question 23

**QUESTION 23**

What is the cause the plateau at X?

- The water has become contaminated
- Cells have become fully turgid
- No net movement of water into the cells

QUESTION 30

In the cyclic light-dependent reaction of photosynthesis, an excited electron is produced when light strikes water _____

QUESTION 31

Rickets is a disease caused by deficiency of vitamin D _____

QUESTION 32

Enzyme pepsin is found in the saliva of humans _____

QUESTION 33

White blood cells and platelets are produced in bone marrow _____

QUESTION 34

Tendons join muscles to bones _____

Section C: Short answer questions

Short answer questions

QUESTION 35

With regard to human nutrition what is an essential fatty acid? (2 marks)

QUESTION 36

In insects air is conveyed directly to the tissues of the body by a system of air tubes. What is the name of the opening of these air tubes to the outside? (2 marks)

QUESTION 37

Re-arrange the following Linnaean classification categories into the correct hierarchical order: Order Genus Family, Kingdom, Species, Class, Phylum (2 marks)

A diagram of a typical bisexual flower is shown below. Write down the name of the various parts of this flower labelled A to K in the Table below: (2 marks each)

QUESTION 49

What is the cause of farsightedness in humans? (4 marks)

QUESTION 50

The leaves of the dicotyledonous tea plant called *Camellia sinensis* have a large surface area and are thin. Explain how each of these two features help the leaf to carry out photosynthesis. (4 marks)
