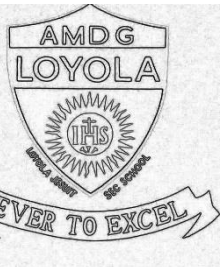


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CLASS: _____



LOYOLA JESUITS SECONDARY SCHOOL

2021 JUNIOR CERTIFICATE EXAMINATIONS

BIOLOGY

Time allowed: 2 hours

(100 Marks)

THEORY

Instructions:

- This paper contains 11 printed pages
Please check.**
- Before beginning to answer these questions fill in your examination number at the top of each paper.
- This paper contains three sections: A, B, C. Answer all questions in each section.
- Section A should be answered by encircling the letter with the correct answer. Section B and C should be answered in the spaces provided.
- Hand in your completed question paper when time is called to stop writing. Write your answers in the spaces provided
- In the table provided on this page, tick against each question you have answered.

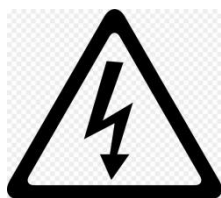
Question Number	Tick if answered	Do not write in these columns	
1-20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			

SECTION A (20 MARKS)

Answer all questions in this section

Encircle the letter corresponding to the correct answer.

1. A diagram of a specimen has a magnification of X2. What is the size of the actual specimen if the diagram is 19cm?
A. 38
B. 17
C. 9.5
D. 21
2. The figure 1 below shows a laboratory warning symbol. What is the meaning of the symbol



- A. Lightening
 - B. Electric shock
 - C. Laser radiation
 - D. Irritant
3. Which of the following is not a general character of living things
A. Breathing
B. Feeding
C. Growth
D. Irritability

The figure 2 below is a food chain. Use it to answer question 4 and 5.

Maize → Mice → Man → Lion

4. What is the primary consumer
A. Maize
B. Mice
C. Man
D. Lion

5. What could happen to the population of mice if maize was eliminated from the food chain?
A. It will increase
B. It will decrease
C. It will be constant
D. It will be the same as that of man
6. Which of the following is a non-flowering plant
A. Ferns
B. Maize
C. Elephant grass
D. Groundnuts

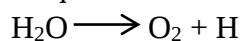
The figure 3 below is a diagram of a moss; use it to answer questions 7 and 8



7. Name the part labeled X
A. Flower
B. Shoot
C. Capsule
D. Leaf
8. Which of the following is true about mosses?
A. They do not have true roots
B. They produce flowers
C. They grow in dry areas
D. They have true stems

9. Which of the following is an example of mollusk
- A. Earthworm
 - B. Lungworm
 - C. Leech
 - D. Snail
10. Name the food substance that is oxidized to release energy
- A. Carbohydrate
 - B. Mineral salts
 - C. Water
 - D. Hormone
11. Which of the following vitamins helps in controlling night blindness
- A. Vitamin A
 - B. Vitamin B
 - C. Vitamin C
 - D. Vitamin D
12. Which of the following is miss matched
- A. Lipids – Fatty Acids
 - B. Lactose - Fructose
 - C. Proteins – Amino Acids
 - D. Sucrose - Glucose
13. Trypsin is an enzyme found in the pancreatic juice. It is responsible for
- A. Digestion of carbohydrates
 - B. Digestion of fats
 - C. Digestion of lipids
 - D. Digestion of proteins
14. Which of the following transports oxygen
- A. Capillary
 - B. Red blood cells
 - C. White blood cells
 - D. Platelets

15. Identify the process represented by the word equation below

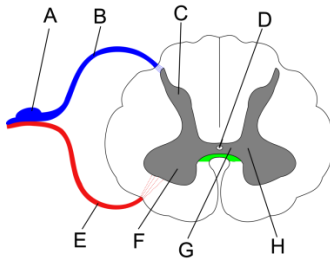


- A. Nitrification
 - B. Fixation
 - C. Photolysis
 - D. Photophosphorylation
16. Which of the following diarrheal diseases is caused by a bacteria called *Entamoebahistolytica*
- A. Amoebic dysentery
 - B. Bacillary dysentery
 - C. Cholera
 - D. Typhoid
17. Identify the following injury to a joint



- A. Strain
 - B. Sprain
 - C. Dislocation
 - D. Fracture
18. Which of the following is a way of correcting cataract as an eye defect
- A. Fitting spectacles with a convex lens
 - B. Fitting spectacles with a concave lens
 - C. Removing opaque lens through surgery
 - D. Using a lens that had been ground unequally.

The figure 5 below is a diagram of a spinal cord. Use it to answer questions 19 and 20

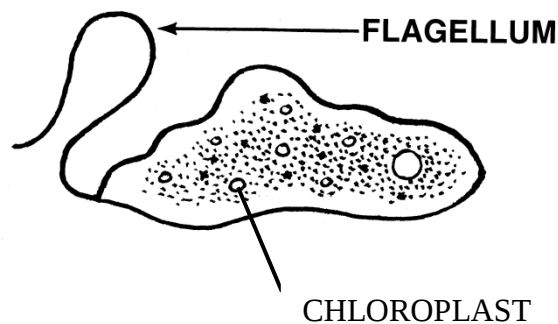


19. Name the part labeled A
- Dorsal root
 - Ventral root
 - Ganglion
 - White matter
20. Part marked D is filled with:
- Blood
 - Cerebro-spinal fluid
 - Pleural fluid
 - Pericardium fluid

SECTION B (Structured questions)

Answer all questions in this section

21. **Figure 6** shows a diagram of a microorganism. Use it to answer the questions that follow.



- a. Name an organism in **figure 6** above

_____ (1 mark)

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b. To which of microorganism does an organism in figure 6 above belongs to?
_____ (1 mark)

c. Explain why an organism in the figure 6 above is considered as a plant?

_____ (2 marks)

22. a. Mention the first **two** steps in designing scientific investigations.

_____ (2 marks)

b. Give **two** guidelines when making scientific reports.

_____ (2 marks)

23. a. Give **one** function of each of the following parts of a plant:

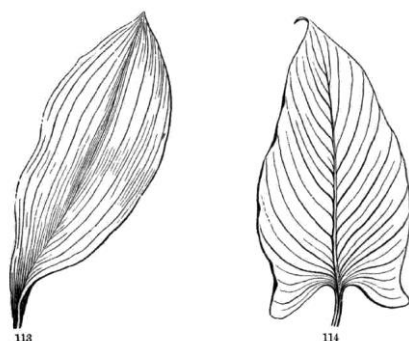
i. Roots.
_____ (1 mark)

ii. Stems.
_____ (1 mark)

b. Explain the distribution of stomata on leaves of plants growing in dry conditions.

_____ (2 marks)

24. **Figure: 7** is a diagram of leaves for flowering plant. Use it to answer the questions that follow.



J L

a. Identify the groups of flowering plants represented by each of the leaves labeled:

i. **J**: _____ (1 mark)

ii. **L**: _____ (1 mark)

b. State two common observable structures of flowering plants shown in **figure 7**.

_____ (2 marks)

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25. a. Define the meaning of the term, **balanced diet**.

(1 mark)

b. Identify any **three** main components used when designing a balanced diet.

(3 mark)

c. Explain **one** way to prevent obesity.

(2 marks)

26. a. Describe the process of blood donation.

(4 marks)

b. Mention **two** activities of Malawi Blood Transfusion Services (MBST).

(2 marks)

27. a. Define the term, stimulus.

(1 mark)

b. Mention any **two** effects of alcohol on the body.

(2 mark)

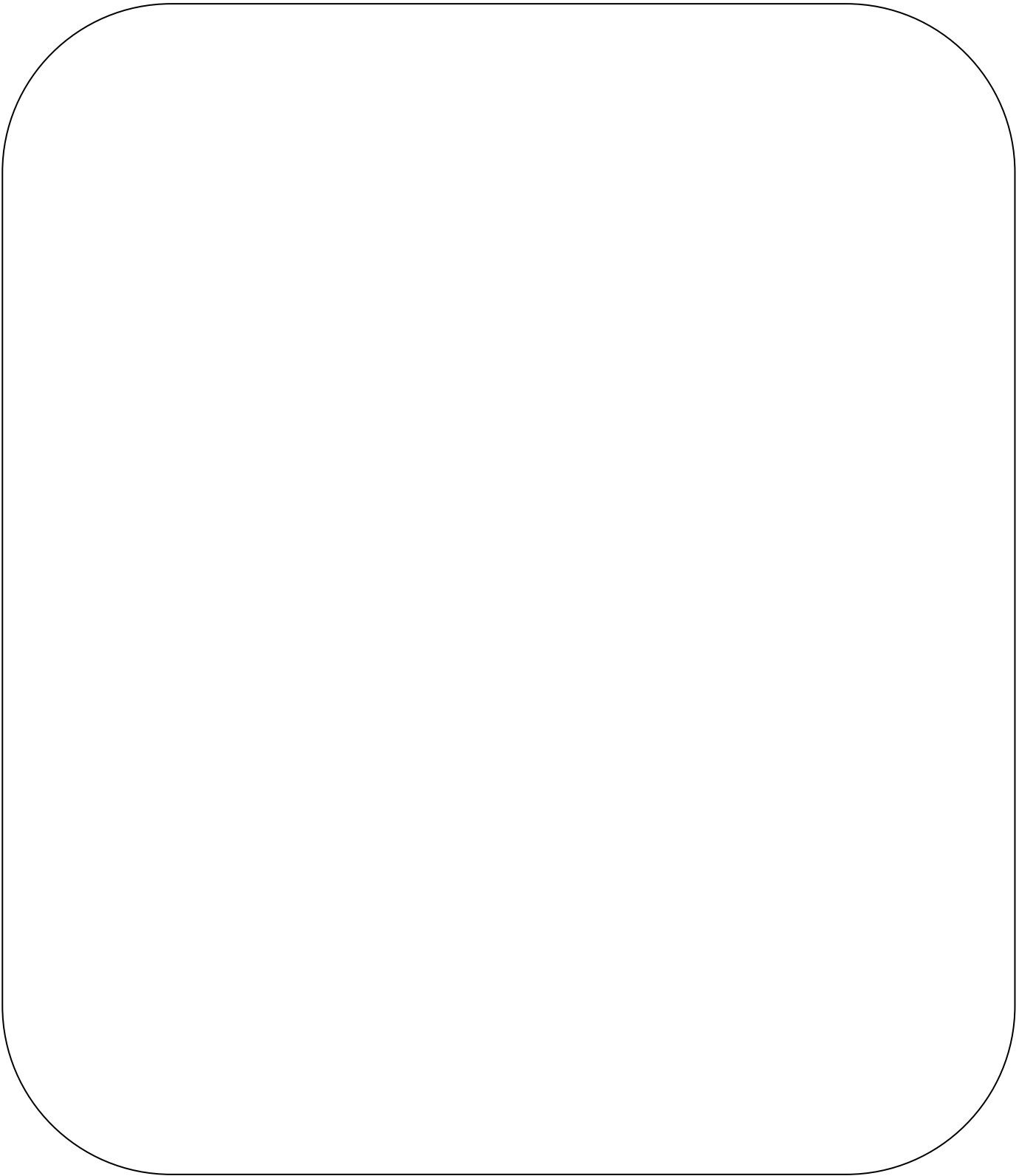
c. Mention any **two** ways in which people with HIV/AIDS can care for themselves.

(2 marks)

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28. With the aid of a well labeled flow diagram, state seven steps of identifying living things into various hierarchy.

A large, empty rounded rectangular box with a thin black border, intended for the student to draw a well-labeled flow diagram showing the seven steps of identifying living things into various hierarchies.

(7 marks)

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SECTION: C (ESSAY QUESTIONS)

29. Discuss **five** safety measures with broken glassware in science laboratory. Write in an essay form.

[illegible]

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CLASS: _____

30. Explain **five** roles of microorganisms. Write in an essay form.

[illegible]

STUDENT ID: _____

CLASS: _____

31. Describe an investigation to find out the composition of exhaled air. Include procedure, observations and conclusion. Write in an essay form.

[illegible]

(10 marks)

END OF QUESTION PAPER