

STUDENT EDUCATION NUMBER									

Samoa National Junior Secondary Certificate

BIOLOGY 2023

QUESTION and ANSWER BOOKLET

Time allowed: 3 Hours & 10 minutes

INSTRUCTIONS

- 1. You have 10 minutes to read **before** you start the exam.
- 2. Write your **Student Education Number (SEN)** in the space provided on the top right-hand corner of this page.
- 3. Answer ALL QUESTIONS. Write your answers in the spaces provided in this booklet.
- 4. If you need more space, ask the Supervisor for extra paper. Write your SEN on all extra sheets used and clearly number the questions. Attach the extra sheets to the appropriate places in this booklet.

STRANDS		Pages	Time (min)	Weighting
STRAND 1	VARIETY OF LIFE	2-5	36	20
STRAND 2	CELL BIOLOGY	6-10	36	20
STRAND 3	ANIMAL BIOLOGY	11-14	36	20
STRAND 4	PLANT BIOLOGY	15-19	36	20
STRAND 5	ENVIRONMENT	20-23	36	20
	TOTAL		180	100

Check that this booklet contains pages 2-24 in the correct order and that none of these pages are blank.

HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

B. Rabies lyssavirus. C. Escherichia coli. D. Pseudomonas aeruginosa. Which of the following statements is true about the differences between antiseptics and disinfectants? A. Antiseptics are used on non-living objects, while disinfectants are used on living tissue. B. Antiseptics are used on living tissue, while disinfectants are used on non-living objects. C. Antiseptics and disinfectants are interchangeable and can be used for the same purposes. D. Antiseptics are stronger and more effective than disinfectants. Which of the following microbes are commonly used in the production of antibiotics? A. Fungi B. Archaea C. Algae D. Protozoa Briefly describe the process by which bacteria reproduce.	ND 1:	VARIETY OF LIFE	WEIGHTING 2
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D. Protozoa Briefly describe the process by which bacteria reproduce.	B.	Archaea	
Briefly describe the process by which bacteria reproduce.	C.	Algae	
· · · · · · · · · · · · · · · · · · ·	D.	Protozoa	
	Briefly	y describe the process by which bacteria reproduce.	
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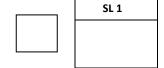
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trolling diseases. I	clude at least ONE example of	fer when it comes to curing and con of an antibiotic AND a herbal remed	
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Discuss the role of any decomposers found in active compost. Include in your answer the following details: (a) Definition of active compost; (b) ONE example of a decomposer found in active compost; (c) How the decomposer you named in (b) contributes to the breakdown of organic matter; (d) Name ONE factor that can increase the decomposition activity. SL 4

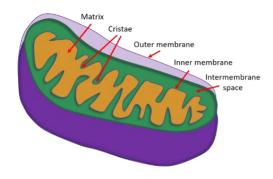
9.

For Question 10, choose and write the LETTER of the correct answer in the box provided.

- 10. Which of the following statements best describes the function of the Golgi bodies in the cell?
 - A. It produces ATP for the cell.
 - B. It synthesizes proteins.
 - C. It packages and modifies proteins and lipids.
 - D. It controls cell division.



11. The diagram below shows an organelle that is found in both animal and plant cells.



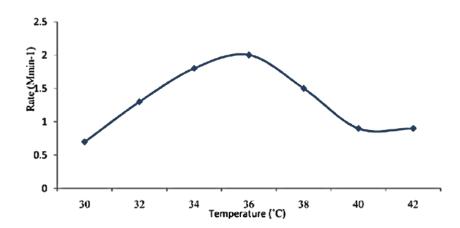
Source: https://www.meresearch.org.uk/wpcontent/uploads/2021/06/Mitochondrion.png

me the organelle shown in the diagram above and discuss how it the chartest it is the chartest that the chartest is the chartest and discuss how it the chartest in the charte	
	 SL 4

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Use the diagram below of Meiosis 1 to determine what happens to the chromosomes in Metaphase 1 and Anaphase 1.	
Prophase I (2n = 4)	
Metaphase I	
Anaphase I	
Telophase I	
Cytokinesis (n = 2) Meiosis II	
Source: http://cyberbridge.mcb.harvard.edu/mitosis_6.html	
	SI

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	- 3.
Explain the process of cellular respiration and why it is important for organisms. Include in your answer the main product that is formed.	
	SI

16. The graph below shows how the rate of fermentation is affected by temperature.



Interpret the graph to explain how temperature affects the process of fermentation.	
	SL 3

•	romosomes contribute to determining the	
		

STRAND 3:	ANIMAL BIOLOGY	WEIGHTING 20

For Questions 18 and 19, choose and write the LETTER of the correct answer in the box provided.

- 18. Which of the following animals uses gizzard to grind up food in their digestive system?
 - A. Human
 - B. Fish
 - C. Bird
 - D. Frog
- 19. Which gland is responsible for producing testosterone in males?
 - A. Adrenal gland
 - B. Thyroid gland
 - C. Pituitary gland
 - D. Testes

SL 1

SL 1

20. Use the diagram below to describe the function of the fallopian tube and the ovary in the female reproductive system.

FEMALE REPRODUCTIVE SYSTEM



SL 2	

Source: https://www.vecteezy.com/vector-art/10065956-numan-anatomy-remaie-reproductive-system-female-reproductive-system-female-reproductive-organs-the-system-of-inclusion-the-organs-of-the-uterus-cervix-ovaries-ovaries-and-fallopian-tubes-overview-illustration

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23.	Draw a diagram showing the structure of a human alimentary canal (digestive system) and label the following structures: **pharynx, mouth, esophagus, anus, rectum, large intestine, small intestine, and stomach.	
		SL 4
24.	Explain what gout is and provide any TWO effects it has on any organ system.	
	·	SL 3

Discuss FOUR different	ways to prevent §	gout.			
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STRAND 4:	PLANT BIOLOGY	WEIGHTING 20

For Questions 26 to 28, choose and write the LETTER of the correct a	, answer in the box i	provided.
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uesti	ons 26 to 28, choose and write the LETTER of the correct answer in the box p	rovide	d.
Wh	ich of the following statements about translocation is true?		
A.	It is the movement of water molecules across a selectively permeable membrane.	Г	
В.	It is the movement of ions from an area of higher concentration to an area of lower concentration.		SL 1
C.	It is the movement of carbohydrates or other organic compounds from one part of a plant to another.		
D.	It is the movement of nutrients from the soil into the roots of a plant.		
Wh	ich of the following is a byproduct of photosynthesis?		
A.	Oxygen	ı	
В.	Carbon dioxide	\neg $ $	SL 1
C.	Glucose		
D.	Water		
Wh	ich of the following factors can affect the rate of photosynthesis?		
A.	The color of the plant's leaves.	Γ	
В.	The size of the plant's stem.	─ ┐	SL 1
C.	The amount of nitrogen in the soil.		
D.	The intensity of light.		
	cuss the process of photosynthesis and the THREE important roles it provides for the same of the sam	or	
			SL 4

Describe TWO important roles of the transpiration process in plants.	
Describe 1 WO important roles of the transpiration process in plants.	
	SL 2
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31.	Explain how the following environmental factors affect the rate of transpiration.	
	temperature, humidity, wind	
		SL 3
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32.	Briefly describe how water is transported throughout the plant. Include in your answer the vessel that transports water.	
		SL 2
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		-
		-

Describe the significance of translocation in plants.	
	61.0
	SL 2
the structure and function of the following <i>epidermis, mesophyll, stomata, and vascular tissues.</i>	
Carbon Dioxide ————————————————————————————————————	
Guard Cell Cuticle	
Stoma Upper Epidermis Palisade Mesophyll cells	
Veins Xylem —— Spongy Mesophyll cells	
Phloem Lower Epidermis	
Stoma Cuticle Guard Cell	
Source: https://byjus.com/question-answer/what-is-the-internal-structure-of-a-leaf/	
	SL 4
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or C	Questic	on 35, choose and write the letter of the correct answer in the box provided.	
35.	Whi	ch of the following best describes parasitism?	
	A. B.	A relationship where both organisms benefit. A relationship where one organism benefits and the other is unaffected.	SL 1
	C.	A relationship where one organism benefits at the expense of the other.	
	D.	A relationship where both organisms are harmed.	
36.	Desc	cribe what ecological tolerance is and state a factor that affects it.	
			SL 2
37.	Desc	cribe TWO methods used to control pests and how they differ when used.	
			SL 2
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Describe TWO causes o	f pollution in your loca	al area.		
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Explain THREE c	ommon pest m	ianagement pi	ractices you k	now or.	
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STUDENT EDUCATION NUMBER									

SNJSC BIOLOGY

2023

(For Scorers only)

STI	RANDS	Weighting	Scores	Check Scorer	AED Check
STRAND 1	VARIETY OF LIFE	20			
STRAND 2	CELL BIOLOGY	20			
STRAND 3	ANIMAL BIOLOGY	20			
STRAND 4	PLANT BIOLOGY	20			
STRAND 5	ENVIRONMENT	20			
Т	OTAL	100			