



Total score

Name

School.....

Roll No.....

Republic of Somaliland

Somaliland National Examination Board

Form Four

Biology
EXAMINATION
2022 - 2023

TIME 2 HOURS

Plus 10 minutes for reading through paper

INSTRUCTIONS TO CANDIDATES

This paper consists of **11** printed pages
Count them now. Inform the invigilator if there are any missing or extra pages.
The exam consists of **2** parts:

PART 1:	20 Multiple Choice Questions	40 Marks
PART 2:	10 Structured Questions	60 Marks
	TOTAL	100 Marks

- Answer ALL questions in Part 1 and 2.
- Extra papers and mobiles are NOT allowed.

PART ONE: Multiple Choice Questions

(40 Marks)

- Which of the following is an extrinsic disease factor that can cause a disease?
 - Hormonal disturbances
 - Genetic abnormalities
 - Nutritional factor
 - RH⁺ factor
- The site of action of whooping cough disease is
 - Intestines
 - Upper respiratory system
 - Nervous system
 - Reproductive system
- Which of the following is endoparasite?
 - Ticks
 - Liver fluke
 - Lice
 - Mites
- _____ is a method of controlling livestock parasite in which some drugs are given to an animal to kill the worms.
 - De-worming
 - Dipping and spraying
 - Hygiene
 - Sanitation
- In Punnett square show below, which of the following is true about the offspring resulting from the cross? (TT × Tt)
 - About half are expected to be short
 - All are expected to be short
 - About half are expected to be tall
 - All are expected to be tall

	T	t
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6. Which of the following alleles is homozygous recessive?
- TT
 - tt
 - Tt
 - tT
7. Artificially acquired passive immunity involves
- Vaccination with attenuated virus or bacteria
 - The transfer of antibodies, as from a mother to her fetus
 - Antibody formation as a result of exposure to antigens in the environment
 - Injection of performed antibodies such as immunoglobulin
8. Which of the following is NOT a member of reactants required by photosynthesis?
- Water
 - CO₂
 - Oxygen
 - H₂O
9. Nutritional diseases caused by either inadequate diet or unbalanced diet is known as
- Infectious diseases
 - Physical diseases
 - Social diseases
 - Deficiency diseases
10. _____ are internal framework of the cell and are found in the cytoplasm of most cells
- Cytoskeleton
 - Centrioles
 - Endoplasmic reticulum
 - Golgi apparatus

11. A type of feeding where the organism consumes decaying organic matter is called
- Holozoic
 - Parasitism
 - Phagocytosis
 - Saprophytic
12. Rate of diffusion across plasma membrane is affected by
- Temperature
 - Particle size
 - Concentration gradient
 - All
13. Anti-diuretic hormone (ADH) is secreted by _____ in response to an increase in the osmotic pressure of blood.
- Kidney
 - Pituitary gland
 - Pancreas
 - Liver
14. The right side of the heart receives deoxygenated blood from the _____.
- Aorta
 - Capillaries
 - Vena cava
 - Arterioles
15. The upper most tip of the stem where upward growth of the stem takes place is known as
- Axial bud
 - Terminal bud
 - Lateral bud
 - Radial bud

16. Which of the following is the function of worker bees?
- Protect the hive from the intruders
 - Make honey and bee wax
 - Clean the hive
 - All are the functions of worker bee
17. Fertilizers are regrouped according to the nutrients they supply. Which of the following is correct for regrouping.
- Straight and compound fertilizers
 - Band placement
 - Incomplete compound fertilizers
 - Soil PH
18. _____ is unicellular fungi that reproduce asexually by budding.
- Mushroom
 - Toad stool
 - Yeast
 - None
19. The scientific study of diseases, abnormal structures and function, symptoms and effects is called
- Pathology
 - Genetics
 - Paleontology
 - Embryology
20. Human diseases caused by _____ include tuberculosis, pneumonia, leprosy, typhoid, tetanus, diphtheria and food poisoning.
- Insects
 - Pathogenic bacteria
 - Viruses
 - Fungi

PART TWO: Structured Questions

(60 Marks)

1.

a. What are infectious diseases?

(1 Mark)

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b. Name two ways through which pathogens /germs spread from infected person to healthy person. (2 Marks)

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c. Give two examples of infectious disease

(1 Mark)

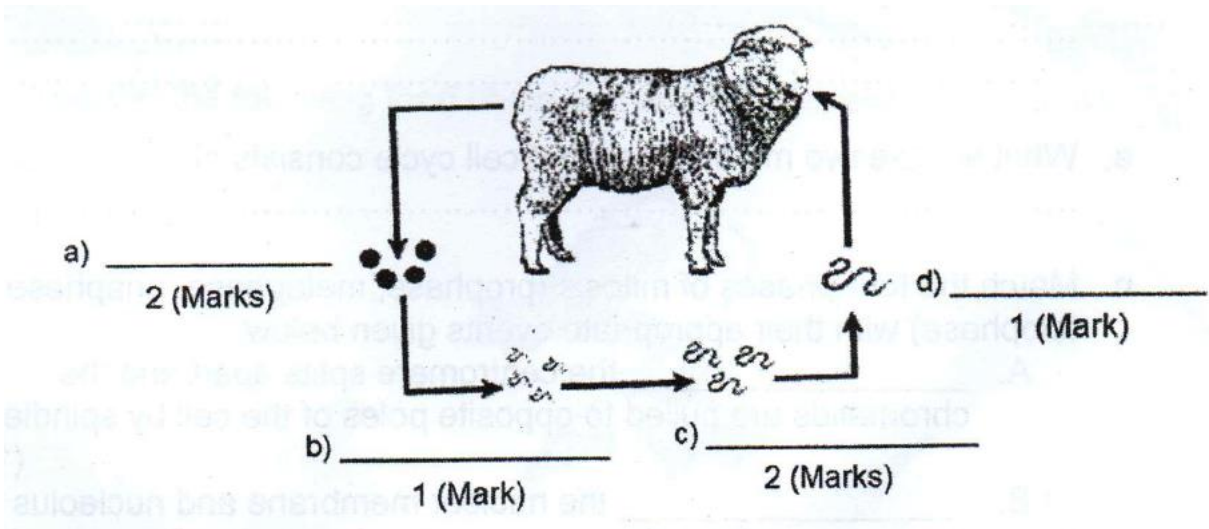
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d. State the pathogen that causes typhoid.

(2 Marks)

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2. The following diagram illustrates the life cycle of roundworm as it affects the livestock. Label the missing parts.



3. Make comparison in between the two types of photosynthesis.

Use the terms **C₃** and **C₄** to complete the following table. (6 Marks)

Features	C3 or C4
a) Use enzyme rubisco to fix Co ₂ (1.5 marks)	
b) Calvin cycle takes place in bundle sheet cells (1.5 marks)	
c) Have chloroplasts with no thylakoids (1.5 Marks)	
d) Needs optimum temperature of 15 – 25c ⁰ (1.5 Marks)	

4.

a. Explain the term immune response. (1 Mark)

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b. Immune response can be classified into two categories. Mention them. (2 Marks)

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c. Name only the first line of body defense. (1 Mark)

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d. Explain how interferons take part in body defense against diseases. (2 Marks)

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5.

a. What are the two main stages that cell cycle consists of? (2 Marks)

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b. Match the four stages of mitosis (prophase, metaphase, anaphase and telophase) with their appropriate events given below.

A. _____ the centromere splits apart and the chromatids are pulled to opposite poles of the cell by spindle fibers. (1 Mark)

B. _____ the nuclear membrane and nucleolus disappear and the chromosomes condense. (1 Mark)

C. _____ final phase in which the chromosomes unwind and become less visible. (1 Mark)

D. _____ the spindle fibers attach to the centromere after being lined at the equator. (1 Mark)

6.

a. What is castration? (1 Mark)

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b. Give two reasons for making livestock breeding. (2 Marks)

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c. Why dehorning is important? (1 Mark)

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d. State two methods of dehorning. (2 Marks)

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7. Put the following events in the correct order for pollination by giving number (1 – 4)

(6 Marks)

a. Bees gets dusted with pollen _____

b. Anther splits open _____

c. Bee visits a flowering plant _____

d. Pollen is deposited on stigma _____

(1.5 marks each)

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8. Consider the following food chain and answer the related questions.



a. Which one of the organisms in the food chain above is the secondary consumer? (2 Marks)

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b. Which one of them is herbivore? (2 Marks)

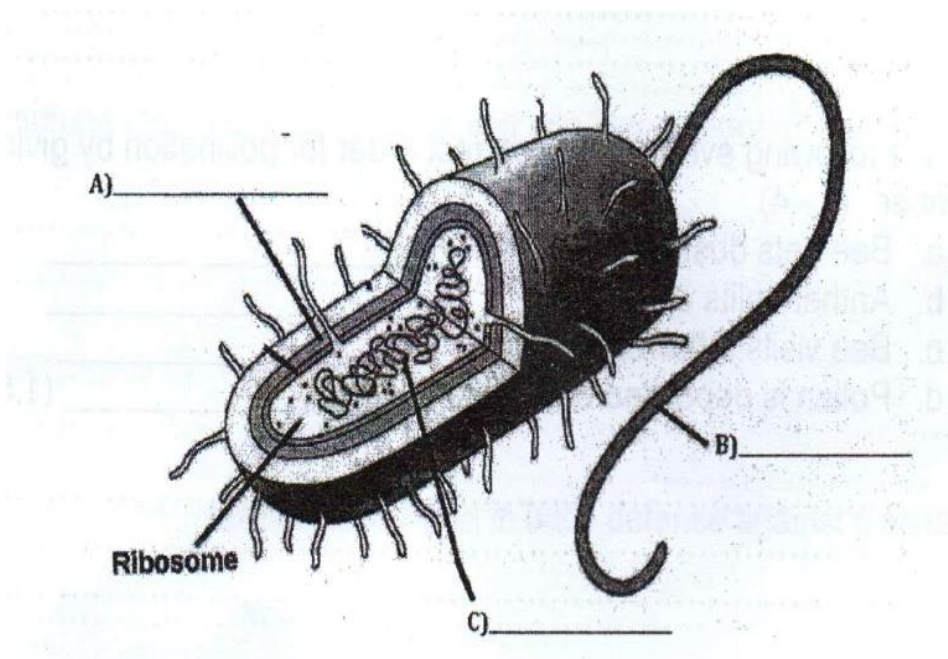
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c. Which organism in the above food chain would be on the base of the trophic /food pyramid? (2 Marks)

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9. The following diagram shows you bacterial structure.

a. Label the missing parts represents by A, B and C (3 Marks)



b. What function does part B perform? (1 Mark)

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c. List the three basic shapes of bacteria (2 Marks)

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10. Complete the following table using the appropriate of farming (mixed farming, shifting cultivation, nomadic pastoralism, agroforestry) (6 Marks)

a) _____	Keeping and movement with livestock in search of pasture and water (1 Mark)
b) _____	Involves rearing both crop and animals on the same farm (2 Marks)
c) _____	Land use system in which trees or shrubs are grown in association with agricultural crops (1 Mark)
d) _____	Is usually practiced in areas of low population density or where arable land is not limited (2 Marks)

END

