

Candidate Name

Centre Number

Candidate Number



ZIMBABWE SCHOOL EXAMINATIONS COUNCIL
General Certificate of Education Advanced Level

ANIMAL SCIENCE
PAPER 2

6028/2

SPECIMEN PAPER

2 hours 30 minutes

Additional materials:
Answer paper,
Scientific calculator.

TIME 2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number in the spaces provided at the top of this page and on all separate answer paper used.

Section A

Answer **all** questions.

Write your answers in the spaces provided on the question paper.

Section B

Answer any **two** questions.

Write your answers on the separate answer paper provided.

At the end of the examination, fasten the separate answer paper securely to the question paper.

INFORMATION FOR CANDIDATES

Marks are given in brackets [] at the end of each question or part question.

You are advised to spend no longer than **80 minutes** on Section A.

FOR EXAMINER'S USE

Section A	
Section B	
TOTAL	

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Section A

Answer all questions

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- 1 (a)** Explain the functions of the smooth endoplasmic reticulum.

[2]

- (b)** Indigenous breeds of livestock have adapted to the Zimbabwean environment. Explain any **two** adaptive characteristics they have in common.

[4]

- (c)** Explain the functions of phospholipids in cell membranes.

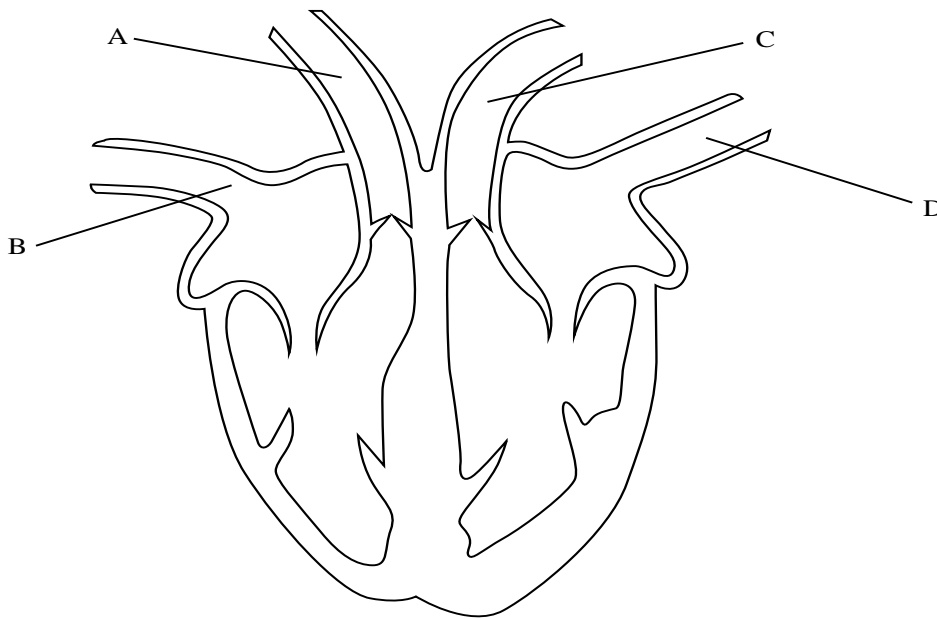
[4]

2

(a) Outline the functions of the lymphatic system.

[4]

(b) **Figure 1** shows vessels that carry blood to and from the heart. Name the parts labelled **A**, **B**, **C** and **D**.



A _____

B _____

C _____

D _____

[4]

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(c) From **Figure 1**, identify blood vessels that carry blood to:

(i) rest of the body.

_____ [1]

(ii) lungs.

_____ [1]

3 (a) Differentiate between true and apparent digestibility.

(i) True digestibility,

_____ [3]

(ii) Apparent digestibility.

_____ [2]

(b) Give **five** factors that affect palatability of livestock feeds.

_____ [5]

4 (a) When a red polled bull (RRPP) is crossed with a white horned cow (rrpp) all F₁ are roan and polled (RrPp).

(i) What type of dominance is operative in terms of coat colour?

_____ [1]

(ii) By means of a genetic diagram determine the expected F₂ phenotypic ratios after selfing the F₁ offsprings.

_____ [4]

(iii) Why is it difficult to establish a herd with all roan cattle compared to a herd with all red cattle?

_____ [1]

(b) Genetic improvement of livestock breeds depend on heritability.

(i) define heritability.

_____ [2]

(ii) Explain why it is relatively more difficult to improve fertility traits compared to productive traits through breeding and selection.

[2]

5 (a) Describe the following terms as they are used in animal breeding:

(i) Natural selection,

[2]

(ii) Artificial selection,

[2]

(iii) Scientific selection.

[2]

(b) Discuss the objectives of animal breeding.

[4]

6 (a) Identify any **four** methods of preserving meat.

[4]

(b) Explain problems associated with in-breeding in animal production.

[6]

Section B

- 7** (a) Briefly describe the characteristics of the following muscle types:
- (i) skeletal, [3]
 - (ii) smooth, [3]
 - (iii) cardiac. [3]
- (b) Describe the following types of breathing:
- (i) Eupnea, [2]
 - (ii) Dioaphragmatic, [2]
 - (iii) Coastal, [2]
 - (iv) Apnea, [2]
 - (v) Hyperpnea. [3]
- 8** Describe the causes of ill health in farm animals under the following:
- (a) Nutritional problems, [10]
 - (b) Pathogenic organisms. [10]
- 9** Discuss factors considered when formulating feeds for livestock in Zimbabwe. [20]
- 10** (a) Outline the advantages and disadvantages of rotational grazing systems in livestock production.
- (i) Advantages, [10]
 - (ii) Disadvantages. [4]
- (b) Explain the advantages of indigenous breeds over exotic breeds of livestock. [6]