

BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE
AGA407

Department of Animal Science
BSc Agricultural Science Part IV Examination
Livestock Improvement

MAR 2024

3 HOURS (100 Marks)

INSTRUCTION: Answer any **FOUR** questions. Each question carries **25 marks**

1. Explain how the following techniques can improve accuracy of genetic evaluation,
 - i. Oestrus synchronization. [5 marks]
 - ii. Sperm sexing. [5 marks]
 - iii. MOET. [5 marks]
 - iv. Cryopreservation. [5 marks]
 - v. AI. [5 marks]
2. Identify and discuss the techniques that can be employed to improve response to selection. [25 marks]
3.
 - a. Discuss methods that can be employed to increase the following,
 - i. Heritability. [5 marks]
 - ii. Repeatability. [5 marks]
 - b. Explain the benefits of increasing heritability and repeatability. [5 marks]
 - c. Discuss how heritability varies with repeatability for a given trait and how accuracy of EBVs respond. [10 marks]
4. Discuss five Dairy, Chicken and Beef traits in terms of the following themes,
 - a) Classification as either, production, survivability or adaptation trait. [14 marks]
 - b) Economic importance. [6 marks]
 - c) Heritability. [5 marks]
5. Discuss the following selection schemes in terms of meaning, procedure, advantages and disadvantages,
 - a) National performance testing scheme. [10 marks]

b) Progeny testing.

[15 marks]

6. Discuss, giving examples positive and negative effects of animal genetic improvements through breeding recorded to date.

[25 marks]

End of Paper