



1ST SEM. 2019/2020

UNIVERSITY OF ESWATINI

FINAL EXAMINATION PAPER

PROGRAMME: B.Sc. ANIMAL SCIENCE DAIRY OPTION YEAR 4

COURSE CODE: ASD401

TITLE OF PAPER: DAIRY BIOTECHNOLOGY AND BIOSAFETY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS.

**THIS PAPER SHOULD NOT BE OPENED UNTIL THE CHIEF
INVIGILATOR HAS GRANTED PERMISSION.**

QUESTION 1

- a) Explain two major differences between conventional biotechnology and modern biotechnology. (8 Marks)
- b) Explain 4 major advantages and 3 disadvantages of using artificial insemination in dairy farming. (17 Marks)

QUESTION 2

Discuss and illustrate bacterial growth and metabolite production during the fermentation process. (25 Marks)

QUESTION 3

Discuss animal cloning and the challenges for its application in dairy farming. (25 Marks)

QUESTION 4

- a) Briefly explain biosafety and its significance in biotechnology. (5 Marks)
- b) Discuss four elements of the national biosafety framework. (20 Marks)

QUESTION 5

- a) Outline three major functions of the Biosafety Registrar. (6 Marks)
- b) Explain three reasons for media sterilization in fermentation. (9 Marks)
- c) Briefly discuss two major advantages of embryo transfer. (10 Marks)