

124



1ST SEM. 2015/2016

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME: B. Sc. ANIMAL SCIENCE,
DAIRY OPTION III**

COURSE CODE: ASD 302

**TITLE OF PAPER: PRINCIPLES OF DAIRY
BIOTECHNOLOGY**

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY 4 QUESTIONS.

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

QUESTION 1

Artificial insemination is one of the devices used for genetic improvement in a dairy herd.

- a. Discuss the artificial insemination procedure (15 Marks)
- b. Outline **FIVE** advantages of this device over natural breeding. (10 Marks)

QUESTION 2

Discuss dairy animal cloning. (25 Marks)

QUESTION 3

Discuss and illustrate microbial growth during milk processing and also state the stages of different metabolite production. (25 Marks)

QUESTION 4

Discuss the concerns of modern biotechnology and the need for biosafety (25 Marks)

QUESTION 5

In a fermentation process you observe proliferation of another micro-organism yet your culture was lactic acid bacteria.

- a) What are **THREE** possible causes of this? (6 Marks)
 - b) Discuss **FIVE** possible effects of this during fermentation. (10 Marks)
 - c) How can you prevent this from occurring in future? (9 Marks)
- 25 Marks**