



1ST SEM. 2012/2013

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

Describe and illustrate the growth phases of *Streptococcus thermophilus* during the yoghurt production process

(25 Marks)

QUESTION 2

Write short notes on the following:

a. Fed batch fermentation

(4 Marks)

b. Semen extension

(6 Marks)

c. rDNA technology procedure in animals

(15 Marks)

QUESTION 3

Discuss the advantages and challenges of embryo transfer in the dairy Industry.

(25 Marks)

QUESTION 4

Outline the justifications and limitations of stem cell culture technology. **(25 Marks)**

QUESTION 5

Outline the advantages and limitation of using modern biotechnology to improve milk yields in developing countries.

(25 Marks)