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**1<sup>ST</sup> SEM. 2018/2019**

**UNIVERSITY OF ESWATINI**

**FINAL EXAMINATION PAPER**

**PROGRAMME: B.Sc. ANIMAL SCIENCE (DAIRY  
OPTION) YEAR IV**

**COURSE CODE: ASD401**

**TITLE OF PAPER: DAIRY BIOTECHNOLOGY AND  
BIOSAFETY**

**TIME ALLOWED: TWO (2) HOURS**

**INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS.**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN  
GRANTED BY THE CHIEF INVIGILATOR.**

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**QUESTION 1**

Define the following terms used in Dairy Biotechnology:

- a. Biotechnology. (3 Marks)
  - b. AI. (4 Marks)
  - c. Embryo transfer. (4 Marks)
  - d. Superovulation. (3 Marks)
  - e. Heat synchronization. (3 Marks)
  - f. Totipotency. (3 Marks)
  - g. Transgenic. (2 Marks)
  - h. Molecular cloning. (3 Marks)
- (25 Marks)

**QUESTION 2**

Describe the following:

- a. rDNA technology and its procedure. (16 Marks)
  - b. Types of fermentation substrates including examples of each. (9 Marks)
- (25 Marks)

**QUESTION 3**

Discuss five (5) measurable variables for fermentation.

(25 marks)

**QUESTION 4**

Outline and describe the roadmap that was followed by Eswatini during the development of the National Biosafety Framework.

(25 Marks)

**QUESTION 5**

Describe key expertise and four functions of the Eswatini National Biosafety Advisory Committee.

(25 Marks)