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University Examinations 2024/2025

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE BIOTECHNOLOGY

SHD 3400: ANIMAL BIOTECHNOLOGY

DATE: DECEMBER 2024

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- a) Explain the following terms as used in biotechnology
 - (i) Transgenesis (2 marks)
 - (ii) Superovulation (2 marks)
- b) Differentiate between invasive and non-invasive methods of embryo typing (4 marks)
- c) Explain sperm-mediated gene transfer technique (4 marks)
- d) List the advantages of embryo transfer in domestic animals (5 marks)
- e) Describe some of the molecular techniques used for diagnosis of diseases in animals (5 marks)
- f) Explain the two methods used in embryo splitting in mammals (4 marks)
- g) Outline the advantages of embryo sexing (4 marks)

QUESTION TWO (20 MARKS)

- a) Describe in detail the general steps followed during embryo transfer in cattle (12 marks)
- b) Discuss the significance of genetically modifying fish (8 marks)

QUESTION THREE (20 MARKS)

Discuss using diagrams where applicable somatic cell transfer in sheep (20 marks)

QUESTION FOUR (20 MARKS)

Discuss giving specific examples some of the ethical issues to be considered when developing transgenic animals (20 marks)