UNIVERSITY OF RUHUNA

FACULTY OF AGRICULTURE

Second Examination in BSc Green Technology   (Part II)

January 2022

AS 2203 Sustainable Livestock Production Systems (Compulsory)

Theory

INSTRUCTIONS

Answer all questions.

Only non-programmable calculators are permitted.

Mobile phones are NOT permitted.

TIME: 3 (three) Hours

INDEX NUMBER

1.

   i. List most prominent types of livestock reared in Sri Lanka.   (20 marks)

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   ii. List the stages of animal source food consumption pattern during the human history.

   (20 marks)

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   iii. Briefly explain the nutritional benefits of animal source food consumption.   (30 marks)

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   iv. Briefly mention the reasons for increased livestock product consumption in many fast developing countries.   (30 marks)

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2.

i. Give the definition of sustainable development as presented in the WCED report (Brundtland Report).   (20 marks)

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ii. In relation to sustainable development, complete the following statements.   (30 marks)
Sustainable development is socially and environmentally...
Sustainable development is socially and economically..
Sustainable development is environmentally and economically.....................................

iii. Define the term sustainable development of livestock production   (20 marks)

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iv. Mention how sustainability assessments can help to make livestock production systems more sustainable.   (30 marks)

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3.   i. List out major economic, environmental and social issues related to the sustainability of a broiler production system.   (100 marks)

Economic issues	Environmental issues	Social issues

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4.   i.   List out major economic, environmental and social problems due to ammonia emission from poultry houses.   (40 marks)

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ii. What are the main GHG emission activities related to commercial livestock production?

(40 marks)

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iii. Briefly mention how increasing productivity of dairy cattle can reduce the methane emission.

(20 marks)

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5. Answer the following questions based on animal behaviour, welfare and sustainable livestock production

i . What is meant by animal behaviour? (10 Marks)

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ii. What is meant by animal welfare ? (10 marks)

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iii. How you can use behaviour as an indicator of welfare (10 marks)

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iv. Give two reasons to why animal welfare is important, especially for farm animals (10 marks)

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v. Compare a "wild pig" with a "modern improved domesticated pig" in terms of body proportion

(10 marks)

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vi. Mention how welfare of pigs was affected as a result of the change you mentioned under "(v)".

(10 marks)

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vii. Mention five freedoms used to assess the welfare of animals   (8 marks for each)

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2. ....

3. ....

4. ....

5. ....

6. The following figure shows the variation of animal welfare with increasing livestock production
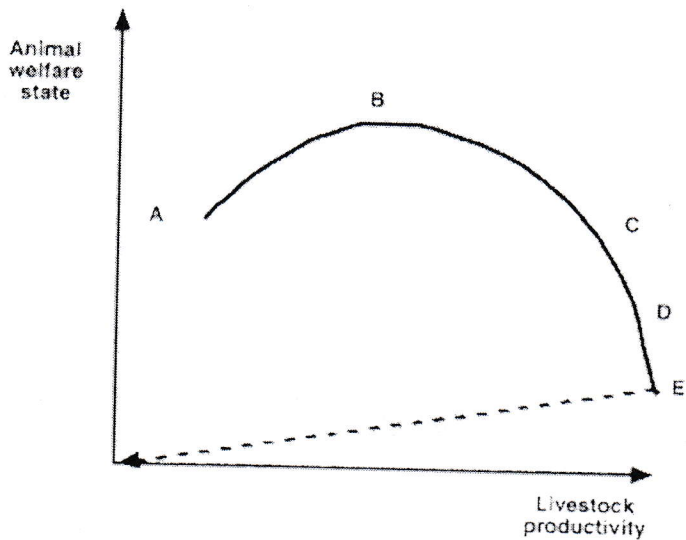
i.   Identify under mentioned welfare/production levels denoted by letters; A-E

                                                                                    (15 marks)

Maximum Production -

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Optimum Production –

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Maximum Welfare   -

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ii. Why it is recommended to go for optimum production over maximum production ?

                                                                                    (20 marks)

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iii. What is the reason for enhancing the welfare of animals from A to B ?   (20 marks)

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iv. What would you expect beyond E for the production and welfare ?   (10 marks)

Production after E

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Welfare of animals after E

....

v. Give possible reason for the answers you made in "**iv**".   (5 marks)

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vi. Under farming conditions what kind of welfare issues you may identify in under mentioned farm animal groups and give possible remedial measures to overcome them.   (30 marks)

Animal Category	Welfare issues	Remedial measures
Dairy Cattle	1. 2. 3. 4. 5.	1. 2. 3. 4. 5.
Poultry	1. 2. 3. 4. 5.	1. 2. 3. 4. 5.
Pig/Swine	1. 2. 3. 4. 5.	1. 2. 3. 4. 5.