

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

FIRST SEMESTER EXAMINATIONS -- 2021

FOOD TECHNOLOGY - FOURTH YEAR DEGREE

FT 431 MEAT POULTRY AND EGG TECHNOLOGY

WEDNESDAY 16TH JUNE, 2021 - 12:50 P.M.

TIME ALLOWED: 3 HOURS

INFORMATION FOR CANDIDATES:

1. You have 10 minutes to read the paper. You must not begin writing in the answer book during this time.
2. **ANSWER ALL QUESTIONS**
3. All answers must be written in the answer books provided.
4. Write your name and number clearly on the front page. Do it now.
5. Calculators are permitted in the examination room. Notes and textbooks are not allowed.
6. Show all workings and calculations in the answer book.

MARKING SCHEME

QUESTION 1	[34 MARKS]
QUESTION 2	[22 MARKS]
QUESTION 3	[18 MARKS]
QUESTION 4	[26 MARKS]

ANSWER ALL QUESTIONS

1. a) Define the term meat including the globally accepted domesticated animal species in your answers [2 marks]
 b) Discuss the stages of animal domestication [6 marks]

c) Match the following with their correct definition by writing the letter of the definition against the word to be defined. [10 marks]

Q	Name	Answer	A	Definition
1.	Stag		a	Castrated male cattle before sexual maturity
2.	Cow		b	Young female pig before pregnancy
3.	Ewe		c	Fully matured adult female pig after farrowing
4.	Wether		d	Fully matured male pig, not castrated
5.	Piglet		e	Fully matured female cattle
6.	Gilt		f	Fully matured male sheep, not castrated
7.	Boar		g	Castrated male cattle under sexual maturity
8.	Ram		h	Fully matured female sheep
9.	Steer		i	Young pig
10.	Sow		j	Fully castrated male sheep

- d) Discuss ANY ONE of the following: [6 marks]
 a. Stunning.
 b. Evisceration.
- e) Explain the basic hygiene and sanitation done after processing of a meat product. [4 marks]
- f) Explain the following: [3 marks]
 a. Portion of meat for trade. [3 marks]
 b. Trade names of meat.

(Total marks = 34 marks)

2. a) Describe ANY ONE of the following: [3 marks]
 (i) The different types of connective tissues
 (ii) The Structure of skeletal muscle [5 marks]
- b) Draw a full labelled diagram of a sacromere. [4 marks]
- c) There are two major categories of skeletal muscle fibers. Explain these categories. [6 marks]
- d) Define the following:
 (i) Actin.
 (ii) Myosin. [4 marks]

e) Explain muscle contraction in the muscle. [4 marks]

(Total = 22 marks)

3. a) Describe How meat is preserved using ANY TWO of the following: [8 marks]
 (i) Control by temperature.

- (ii) Control by moisture.
- (iii) Control by lethal agents.
- b) Explain the importance of pH in meat and its Qualities with the aid of a diagram. [4 marks]
- c) Describe the factors affecting eating quality. [4 marks]
- d) Describe what DFM and PSE in meat. [2 marks]

(Total marks = 18 marks)

4. a) Describe the quality tests done in quality control during sausage manufacturing [6 marks]
- b) Describe TWO named unit operation of sausages [6 marks]
 - c) Describe ANY ONE of the following used for stuffing sausages; [6 marks]
 - (i) Natural Casing
 - (ii) Artificial Casing.
 - d) Describe Brine curing in Bacon manufacturing. [4 marks]
 - e) Explain meat emulsion and emulsifying agents. [4 marks]

(Total marks = 26 marks)