

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

SECOND SEMESTER EXAMINATIONS – 2022

FT 424 – MEAT, FISH AND SEA FOOD TECHNOLOGY

THURSDAY 27TH OCTOBER 2022 – 12:50 PM

TIME ALLOWED: 3 HOURS

INFORMATION FOR CANDIDATES: -

1. You will have 10 minutes to read the question paper. You **MUST NOT** begin writing in the answer book during this time.
2. **ANSWER ALL QUESTIONS.**
3. All answers **MUST** be written on the answer book provided
4. Calculators are permitted in the examination room. Lecture notes, notebooks plain papers and textbooks are **NOT** allowed.
5. Mobile phones are not allowed. **SWITCH OFF THE MOBILE PHONES.**
6. Show all workings and calculations in the answer book.
7. **DRAW** the **STRUCTURES** clear and visible.
8. **DO NOT** over write.
9. Write your name and student **ID number** clearly on the front page of the answer book. **DO IT NOW.**

MARKING SCHEME: TOTAL 100 MARKS

1. (a) State the three (3) stages of animal domestication. [3 marks]

(b) Match the following with the correct definition: [5 marks]

	Name		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

(c) Differentiate between sticking and stunning in abattoir operations of meat. [2 marks]

(d) Describe how meat is preserved using ANY TWO of the following: [9 marks]

- a. Control by temperature using Heat processing.
- b. Control by moisture.
- c. Control by lethal agents.

(e) Describe what DFM and PSE are in meat. [2 marks]

(f) Explain the basic hygiene and sanitation done after processing of a meat product. [3 marks]

(Total= 24 marks)

2. (a) Define the following: [8 marks]

- (i) Comminuted Meat products
- (ii) Table-ready Meat products.
- (iii) Meat Emulsion
- (iv) Emulsifying agent

[3 marks]

[3 marks]

- (b) How is brine curing carried out in Bacon Processing?
- (c) State the function of the following curing agents used in meat:
- (d) Explain the two types of casing using in meat processing and give an example of each. [4 marks]

(Total = 18 marks)

- a) Explain the three kinds of muscles. [3 marks]
- b) Using a diagram to summarize the makeup and break down of muscle. [3 marks]

c) Explain the three types of connective tissues including tendon in your answer. [4 marks]

d) Compare and contrast the two types of Muscle fibers using the following attributes: [3 marks]

- (i) Fiber size
- (ii) Colour
- (iii) Fat content
- (iv) Texture
- (v) Spoilage
- (vi) Fatigability

(Total = 13 marks)

3. (a) Relating to the egg shell, explain how each of the following affects egg shell quality: [4 marks]

- i) Age of Hen
- ii) Calcium

(b) Describe the different components of an egg. [3 marks]

(c) There are different parts in the reproductive system of a hen. Explain what happens in the Infundibulum, the Uterus and the Magnum. [6 marks]

(Total = 13 marks)

4. (a) Describe the commercial classification of fish. [3 marks]

(b) Discuss the mechanism of ANY TWO of the following changes : [4 marks]

- a) Autolysis
- b) Burnt Tuna Syndrome
- c) Rigor mortis

(c) Explain the following anatomy of bony fish: [6 marks]

- a. Skin
- b. Liver
- c. Swim bladder

(d) Explain the Humboldt current/Peru current (Pacific Current) [2 marks]

(Total = 15 marks)

5. (a) Discuss production both capture and aquaculture fisheries in relation to quantities and fishing nations. [3 marks]

(b) Discuss ANY ONE of the following classes, malacostraca and mollusca (cephalopoda & bivalvia). [3 marks]

(c) Discuss the intensity of light at various water depths and its effects on photosynthesis as a source of food supply in a marine environment. [6 marks]

(d) Describe the different levels in the Neritic Province and what marine animals inhabit this province.

(e) Differentiate between a lentic environment and a lotic environment.

[2 marks]

(Total = 17 marks)