



PAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SCIENCES

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| QUALIFICATION: BACHELOR OF SCIENCE IN AGRICULTURE | |
| QUALIFICATION CODE: 07BAGA | LEVEL: NQF LEVEL 6 |
| COURSE CODE: SHN611S | COURSE NAME: SUSTAINABLE NON RUMINANT HUSBANDRY |
| DATE: JANUARY 2023 | |
| DURATION: 3 HOURS | MARKS: 100 |

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| SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER | |
| EXAMINER: | DR HIMA R. AMWELE |
| MODERATOR: | MRS LUCIA TUYENI-KELAO KAFIDI |

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| INSTRUCTIONS |
| <ol style="list-style-type: none">1. Answer all questions2. Number the answers clearly3. Report all your answers to the correct significant figures |

THIS MARKING SCHEME CONSISTS OF 2 PAGES (Excluding this front page)

Question 1

State whether the following statements are true or false:

- a) Caudal fin are used for braking. (2)
- b) The unpaired dorsal and anal fins are used for steering and turning especially at high speed. (2)
- c) The unpaired Pectoral fin is used for propulsion (acceleration). (2)
- d) In viviparous development, the female releases eggs and the developing embryo is nourished by a yolk sac. (2)
- e) Some fishes that have internal fertilization are ovoviviparous and the female retains fertilized eggs in her body. (2)
- f) Oviparous development occurs in some fishes with internal fertilization and the fertilized eggs are retained and develop within the female's ovary or uterus. (2)

[12]

Question 2

2.1 How to disinfect the fish ponds at the bottom? (6)

2.2 Give two examples of common symptoms of bacterial, fungal and parasitic infections of fish diseases? (6)

[12]

Question 3

Give and explain 5 stimulants that positively affect the spawning cues in fish. (10)

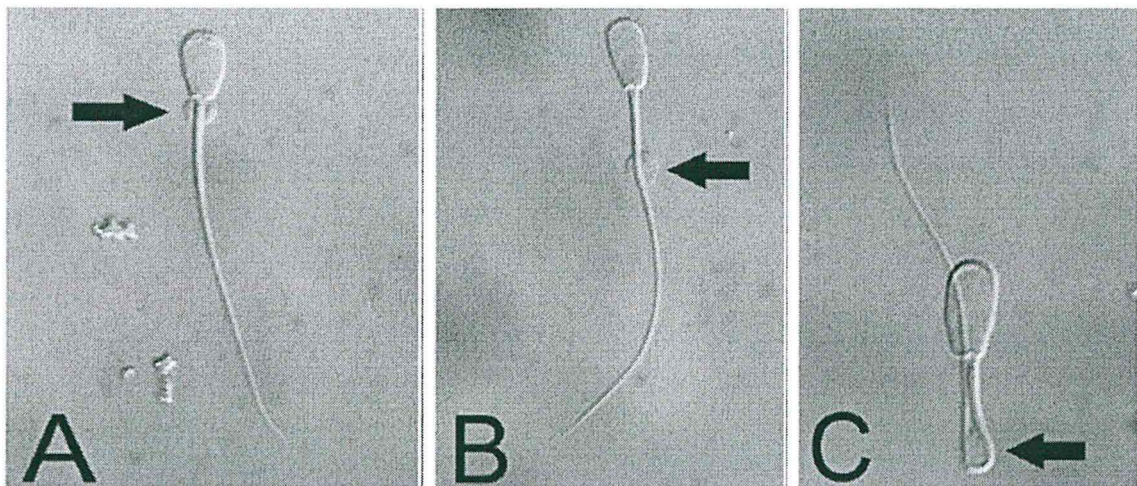
Question 4

Explain the following water quality parameters to be considered in aquaculture production?

- a) Carbon dioxide (5)
- b) Ammonia (5)

Question 5

What are the three conditions of sperms as indicated by A, B and C? (3)



Question 6

- a) At what age does the gilts reaches the puberty? (2)
- b) What is the recommended body weight for the gilt at puberty? (2)
- c) What is the length of a sow estrus cycle? (2)
- d) What is the duration of estrus (heat)? (2)
- e) At what time does ovulation begin? (2)

[10]

Question 7

- 7.1 What are the three signals indicating that the sow is about to give birth? (3)
- 7.2 What are the 2 management techniques which can assist the piglets to survival well?(10)

Question 8

What are the 4 most important aspects considered when determining pig meat quality? (8)

Question 9

Restructure all poultry diseases to correspond with their pathogen and organisms that causes them. (10)

| Pathogen | Diseases | Organisms |
|-----------|--------------|------------------------|
| Bacterial | Fowl Typhoid | Herpes |
| Bacterial | Marek's | Pasteurella multocida |
| Viral | Blackhead | Histomonas meleagridis |
| Protozoan | Fowl Typhoid | Salmonella gallinarum |

Question 10

Define the following terms

- Body weight increase/ gain (2)
- Specific growth rate (2)
- Feed conversion ratio (2)
- Protein Efficiency Ratio (PER) (2)
- Condition Factor (CF) (2)
- Survival rate (2)

[12]

Total:.....[100]



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