## UNIVERSITY OF SWAZILAND
## SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME:     B.SC AG.ED YEAR IV, B.SC LWM YEAR IV & B.SC AN.SCI YEAR IV

COURSE CODE:     APH 405

TITLE OF PAPER:    FISH FARMING

TIME ALLOWED:    TWO (2) HOURS

INSTRUCTIONS:     ANSWER FOUR (4) QUESTIONS

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## QUESTION 1
**Fish physiology**
    **A)** List the 3 ways that fish get oxygen from the environment.      (3X 3=9.0 points)
    **B)** Explain why the freshwater fish does not drink water?      (6.0 points)
    **C)** Describe the function of swim bladder in the fish.      (10.0 points)


## QUESTION 2
**Fish reproduction**
    **A)** Explain in detail the reproduction of tilapias of genus *Oreochromis*.
         (20.0 points)
    **B)** Explain the meaning of successive polygyny and polyandry.      (2X2.5 points)


## QUESTION 3
**Fish environment.**
    **A)** With reference to water turbidity, explain the meaning of Secchi disc visibility less than 20 cm.      (10.0 points)
    **B)** *Euryhaline* species such as some tilapias can live in fresh, brackish or saltwater environment. Does it mean that those tilapias are conformable in all the environment? Explain your answer.
         (15.0 points)


## QUESTION 4
**Fish diseases**
Ectoparasitic diseases in the Tilapia fish are mainly due to *Icthyophthirius*, *Trichodina*, *Chilodonella*, etc.

1-Write a short note on bath treatment using:
    **A)** Formaline 25 ppm      (4 points)
    **B)** Malachite green      (7 points)
    **C)** Salt (NaCl)      (4 points)

2-Write a short note on fish treatment using antibiotics:
    **A)** Main antibiotic used.      (3 points)
    **B)** Disadvantages.      (4 points)
    **C)** Injection application on fish      (3 points)


## QUESTION 5
**Fish processing**
Fish preservation can be done by smoking methods. Explain in detail the smoking process of fish.      (25.0 points)