

**Bago University**  
**Department of Zoology**  
**Second Semester Examination, September 2019**

**Fourth Year (B.Sc)**  
**(Zoology Specialization)**  
**Answer ALL questions**

**Zool.4114**  
**Aquaculture**  
**Time Allowed: (3) Hours**

- I. State TRUE or FALSE to the following statements. (10 marks)**
1. Local species also became popular due to increased demand and higher prices.
  2. Cyprinids constitute the major group of all culture animals in freshwater.
  3. Most tilapia production in the world originates from semi-intensive pond systems.
  4. Spawning occurs at night and fertilization is external.
  5. After spawning eggs are kept in the same tank for fertilization until hatching.
  6. If salinity deviates too much from optimum, the animal will die.
  7. Low DO concentration may cause poor appetite in fish species.
  8. Some fish species feed on plant matter have no stomach.
  9. Aquaculture farming communities rely on farm-made feeds.
  10. It is difficult to compare aquaculture products with fisheries products.
- II. Complete the following statements with appropriate words. (10 marks)**
1. Ponds are most commonly used for ----- of fish and crustaceans.
  2. Recirculation has been used for a long time in aquarium and -----.
  3. The most common tilapias species reaches sexual maturity at a size of -----gm.
  4. Tilapias display distinct sexual dimorphism as they become -----.
  5. Water exchange is regularly carried out by ----- and supplemented by pumping.
  6. Crustaceans and bivalves conform to their environmental -----.
  7. Oxygen is needed to oxidize ----- matter from food.
  8. Diets for aquatic animals need to be ----- and easily ingested.
  9. Vitamins A, D, E and K are ----- soluble.
  10. Diseases in aquaculture species include both infectious and non-infectious -----.
- III. Answer ALL questions (10 marks)**
1. Describe the good practice in hatchery management.
  2. List the advantages of artificial reproduction by induced breeding.
  3. Mention the lethal concentration of ammonia to aquatic organisms.
  4. Write an account on macro-minerals in fish nutrition.
  5. Give a brief account on moist feeds used in aquaculture.
- IV. Answer ALL questions (20 marks)**
1. Explain about the control of reproduction in tilapia culture.
  2. State about the semi-intensive grows out farming of tiger shrimp.
  3. State the optimum pH of freshwater and marine animals.
  4. Mention the processes of gas super saturation in water.
- V. Answer ANY THREE questions (30 marks)**
1. Write a brief account on the pens used for aquaculture.
  2. Explain as far as you can on the induced breeding of *Labeo rohita*.
  3. State briefly on the genetically male (YY) tilapias.
  4. Describe the effects of water temperature on culture species.
  5. Write an interesting account on carbohydrates in fish nutrition.
  6. Describe basic characteristics that influence post-harvest technology.

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