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B.E./ B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2011

AGRICULTURAL ENGINEERING BRANCH

FIFTH SEMESTER

AI 9304 – AQUACULTURE ENGINEERING

(REGULATIONS 2008)

Time: 3 hr

Max Mark: 100

Answer ALL Questions

Part – A (10x 2 = 20 marks)

1. Write any two important shrimp species
2. Why phosphorus is important for aquaculture farming and how P-deficiency is managed?
3. How do you calculate the yearly water requirement for aquaculture pond?
4. During soil analysis for constructing aquaculture pond it is found that the clay content is 5%. What is your suggestion whether to proceed or not?
5. It is given that the top of the dam is 3m, the depth is 4m plus 0.5m free board, the bottom of the dam is 12 m, the calculate the earth needed.
6. Which is the most preferred netting material? Why?
7. Why feeding trays are preferred for shrimp species?
8. Calculate the ammonia loading rate in the tank containing 1500 striped bass fingerlings each weighing 100g tank.
9. How the design height of secondary dike is calculated?
10. What is oyster farming? Name any two commonly farmed food oysters

Part – B (5 x 16 = 80 marks)

11. Write elaborate notes on source of finance and insurance coverage in aquaculture in India (16)
12. a. Furnish the cross-section of the aquaculture pond. Write in detail the water control structures in aquaculture pond (16)
OR
b. Why aeration is given to aquaculture pond? Describe the functions of good aerator (16)
13. a. Write the steps involved in tank method of fingerling production
Your target is to produce 50,000 fingerling using tank method. You have 5 circular tank with surface area of 25m² and sides 1.5cm high, with air bubblers in each. You have 167 fish available of size 200 – 400 g. You have found that 92 are female and 75 are male. How many breeding cycles are needed? (16)

OR

b. Describe in detail the Recirculation aquaculture system. List the benefits of Nitrifying Bioreactor Technology (16)

14. a. Furnish the schematic of Nitrogen cycle in Aquaculture ponds. Explain how nitrogen is removed from the fish pond by various techniques (16)

OR

b. List the observable signs of potential oxygen problems in fish ponds. Write any eight functions of Aquaculture Authority of India (16)

15. a. Explain in detail about pond management in fish culture (16)

OR

b. Write elaborate notes on the various water quality parameters to be controlled in channel catfish Hatcheries (16)