Roll No: | | | | | | | |

B.E./ B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC 2012

AGRICULTURAL ENGINEERING BRANCH

FIFTH SEMESTER

AI 9304 – AQUACULTURE ENGINEERING

(REGULATIONS: 2008)

Time: 3 hours Max Mark: 100

Answer **ALL** Questions

Part – A (10x 2 = 20 marks)

1. Is it possible to construct earthen aquaculture pond if the soil is having 50% sand content. Why?
2. Write short notes on oyster farming
3. If at the end of a productive cycle, a total of 150kg of fish are harvested from a pond and total of 200kg feed was fed to the fish during production, how much feed is required to produce each kilogram of fish harvested?
4. Write about quarantine pond
5. The soil pH is found to be 8.0. Calculate the quantity of lime required to neutralize 5.0 ha farm area
6. Calculate the quantity of phostoxin required for a shrimp farm of length 150m, width 70m and depth 2m.
7. If in an aquaculture pond a sudden death of algal species occurs, what is it indicating? How do you manage the situation?
8. What is total hardness? Why is it considered as an important parameter for fish farming?
9. How do you know the water is supersaturated? What is its impact on catfish fry?
10. What is the need for feeding trays? Why the height of the tray should be increased?

Part – B (5 x 16 = 80 marks)

11. a. Write elaborate notes on various sources of finance and insurance coverage in aquaculture enterprise

12. a. Explain in detail the construction of dyke and canals in aquaculture pond

OR

b. i) List the factors influencing the dissolved oxygen content of pond water. (8)
ii) How the performance of the aerator is expressed? Describe in detail the air diffusion type aerator (8)

13. a. Write notes on quality of various materials used for aquaculture operation
Write about economic benefit and ecological efficiency of integrated fish farming

OR

b. What is pond management? Explain about post stocking management

14. a. i) Describe in detail the different methods by which sea water is drawn for Aquaculture (8)

ii) A four inch sea water well is to be placed in a sand spit. The static level of the sea water in the ground is at the above Mean Sea Level (MSL) and there is no fresh water present. The sand layer is believed to extend at least 50 metre below MSL. A maximum drawdown of 5m, a radius of influence of 25m and a tested soil hydraulic conductivity of 10m/day are believed to be reasonable for this site. Calculate the maximum sustainable flow rate from this sea water well (8)

OR

b. How the accurate assessment of the yearly water requirement for aquaculture farm is calculated? What are the treatment options available for groundwater used in hatcheries?

15. a. Explain in detail any eight water quality requirements for catfish hatcheries

OR

b. Explain how Nitrogen is removed by various methods in aquaculture pond