

## DIPLOMA IN AQUACULTURE (DAQ)

Term-End Examination

December, 2019

## BAQ-002 : FRESH WATER AQUACULTURE

Time : 3 hours

Maximum Marks : 100

*Note : (i) Attempt any five questions.**(ii) All questions carry equal marks.**(iii) Support your answers with well labelled diagrams wherever necessary.*

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1. (a) Explain the following : 2½x4=10
- (i) Why are sources of water carrying silt considered undesirable in a hatchery ?
- (ii) What is the function of a 'nursery pond' and that of a 'rearing pond' in a hatchery ?
- (iii) What are weed fish ? Name a weed fish.
- (iv) What is meant by hypophysation ?
- (b) A fish in the culture pond shows swollen skin with white spots. Name the disease and the causative parasitic organism. How can you prevent fish under culture from getting this disease ? 5
- (c) Name the two minerals whose deficiency can become limiting factor for the fish under culture. State one symptom of the deficiency of any three vitamins in the diet of the fish. 5
2. (a) You have moved to a place where there is lot of mulberry cultivation. Explain to cultivators how they can introduce Seri-fish (silk worm and fish) integrated cultivation highlighting facts of energy flow of such a dyke - pond system which make it a highly economically viable system of integrated fish farming. 10
- (b) Write notes on the following terms associated with farming of trouts : 5,5
- (i) Eyed eggs and their transportation
- (ii) Rearing of Swim - up fry
3. (a) State two morphological characters by which catfish can be easily recognised. Name two common Indian small catfish and two of the large catfish suitable for aquaculture. Why are edible catfish particularly favoured among edible fish ? 5
- (b) Give a detailed description of induced breeding in catfish carried out through hormonal treatment till hatching occurs and young finny are placed in nursery ponds. 15

4. (a) Give a brief account of feed formulation and feeding system of fish. 5,5  
 (b) (i) Name any four organisms grown as live feed for shellfish and fish larvae in aquahatcheries. 10  
 (ii) State six advantages of providing cultured live fish in hatcheries.

5. Write notes on any four : 20  
 (a) Murrels  
 (b) Biomineralisation of pearl  
 (c) Indian River Prawn  
 (d) Bandh breeding of carps  
 (e) Measuring nutrient digestibility

6. (a) Match the diseases caused in fish given in Column A with their causative organisms condition mentioned in Column B : 5

Column A		Column B	
(I)	Branchiomycosis	(A)	Myxozoa
(II)	Enteric red mouth	(B)	Virus
(III)	Proliferative kidney disorder	(C)	Bacteria
(IV)	Gas bubble disease	(D)	Fungus
(V)	Infections Pancreatic Necrosis	(E)	Supersaturation of gases

- (b) Give an account of cultivation of *Azolla*. State the usefulness of *Azolla* in aquaculture practices. 10  
 (c) How is Mahseer fish cultured from hatchery reared seed or natural seed in 'grow out' culture ? 5
7. (a) Describe different methods of culture in giant fresh water prawn farming. 10  
 (b) Write a short essay on 'Ornamental fish'. 10