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SARDAR PATEL UNIVERSITY

M. Sc. ZOOLOGY (SEMESTER III) EXAMINATIONS

Day and Date: Monday, 4th January, 2021

Time: 2.00 pm to 4:00 pm

PS03CZOO23: AQUACULTURE TECHNOLOGIES

MAXIMUM MARKS: 70

Q.1. A. Select the most appropriate answer.

8x1 = 8 M

1. Lower _____ concentrations can affect appetite, growth and immunity.
(a) Carbon dioxide (b) pH (c) Oxygen (d) Nitrogen
2. Fish reproduction percentage can be calculated from the _____.
(a) Ratio of spawns: total eggs (b) Ratio of fertilized: unfertilized eggs
(c) Ratio of fertilized: total eggs (d) Ratio of spawns: unfertilized eggs
3. Amongst the following, _____ is a key to successful shrimp culture practices.
(a) Brachionus (b) Chlorella (c) Daphnia (d) Artemia
4. _____ causes crustacean infection in carp breeders.
(a) Dactylogyrus (b) Lernaea (c) Myxosoma (d) Chilodonella
5. Mirror carp is a variety of _____ carp.
(a) Common (b) Silver (c) Grass (d) Chinese
6. Monosex culture of _____ is very common culture practice in Gujarat.
(a) Catla (b) Rohu (c) Mrigal (d) Tilapia
7. _____ is very common in green water culture.
(a) Chlorella (b) Cyclops (c) Daphnia (d) Vorticella
8. _____ Species eat their own spawned eggs.
(a) *P. vannamei* (b) *P. monodon* (c) *P. orientalis* (d) *P. japonicas*

Q. 1. B. Write the answers precisely:

2x8 =16M

1. Enlist different types of aquaculture system.
2. Similarities and differences between Prawn and Shrimp
3. Importance of soil quality parameters monitoring
4. Role of ablation technique in shrimp
5. How to culture rotifers?
6. Antinutritional factors in aqua feed.
7. What are the major microbial hazards in sea foods?
8. Fish processing methods.

Q.2. Briefly answer the following questions. (Seven out of Nine)

7x 2=14 M

1. Significance of dams and dikes in fish farm.
2. How sexual maturity can be confirmed in male and female fishes?
3. Write a short note on identification of pathogens in aquatic animals.
4. Which water parameters should be regulated in cage culture?
5. Importance of pond fertilizers.
6. How to extend the shelf life of fish products?
7. Method for fish sauce production
8. What is androgenesis?
9. Write a short note on monoclonal antibodies in aqua culture.

- Q.3 (a) Describe morphological, meristic and descriptive characteristics of fish. 8 M
(b) Life cycle of *Ostrea* with suitable diagrams.

OR

- Q.3 (a) Explain different criterions for shrimp farming. Add a note on larval stages. 8 M
(b) Write briefly about hypophysation in fish.

- Q.4 Give an overview of bacterial diseases and mention about the remedial measures. 8 M

OR

- Q.4 Write short notes on: (a) White spot syndrome virus; (b) Immunization 8 M

- Q.5 (a) Provide details about food processing in herbivore/carnivore species with an emphasis to various enzymes involved. 8 M

(b) Explain the role of essential vitamins in fish feed and highlight vitamin related diseases.

OR

- Q.5 (a) What is square method? How food ingredients can be calculated? 8 M
(b) Boats and nets

- Q.6 (a) Genotoxicity evaluation tests in fishes. 8 M
(b) Write briefly about the current advancements in marine biotechnology.

OR

- Q.6 Write short notes on: (a) *Aequorea victoria* protein; (b) Fish cell culture 8 M