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**BRAINWARE UNIVERSITY**

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Barasat, Kolkata -700125

Term End Examination 2025-2026**Programme – B.Sc.(BT)-Hons-2023****Course Name – Aquaculture****Course Code - BBT60207****(Semester VI)****Full Marks : 60****Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Aquaculture primarily refers to
 - a) Only fishing in natural waters
 - b) Culture of aquatic organisms under controlled conditions
 - c) Culture of terrestrial crops
 - d) Capture fisheries
- (ii) Which country currently ranks first in world aquaculture production
 - a) India
 - b) Indonesia
 - c) China
 - d) Vietnam
- (iii) Composite fish culture in India mainly involves
 - a) Only marine fishes
 - b) Only exotic species
 - c) Combination of Indian major and exotic carps
 - d) Only ornamental fish
- (iv) Which of the following is a major goal of aquaculture?
 - a) Reduce biodiversity
 - b) Increase aquatic pollution
 - c) Increase fish production under controlled conditions
 - d) Stop fish consumption
- (v) Present global aquaculture production is increasing mainly due to:
 - a) Decline in fish demand
 - b) Overfishing in rivers
 - c) Rising demand for protein and reduced capture fisheries growth
 - d) Decrease in technology use
- (vi) Which is a key constraint in aquaculture development?
 - a) Unlimited water availability
 - b) Disease outbreaks
 - c) No market demand
 - d) No role of feed
- (vii) A hatchery is primarily used for:
 - a) Fish processing
 - b) Fish breeding and seed production
 - c) Fish marketing
 - d) Fish export packaging
- (viii) The most important advantage of hatchery-produced seed is:

- a) It increases water salinity
c) It increases pollution
- b) It reduces oxygen demand
d) It ensures uniform and reliable supply of seed
- (ix) The best soil type for earthen pond construction is:
a) Sandy soil
c) Clay soil
- b) Rocky soil
d) Gravel soil
- (x) A pen culture system is best described as:
a) A closed tank system
c) Deep sea fishing method
- b) Enclosure built in natural water bodies using barriers
d) Land-based filtration system
- (xi) If oxygen drops suddenly in a pond, the immediate action should be:
a) Increase fertilizer application
c) Provide aeration immediately
- b) Stop aeration
d) Add more fish seed
- (xii) If a farmer wants higher yield by using species that occupy surface, middle, and bottom zones, the best method is:
a) Monoculture
c) Composite fish culture
- b) Capture fishery
d) Fish drying
- (xiii) A hatchery wants synchronized spawning; the best method is
a) Induced spawning
c) Cryopreservation
- b) Cross breeding
d) Natural breeding
- (xiv) To manipulate sex ratio in fishes, hatcheries mainly control
a) Light
c) Temperature
- b) Salinity
d) Feeding
- (xv) If ammonia level rises in a hatchery tank, the best immediate action is
a) Increase feeding
c) Partial water exchange
- b) Add fertilizer
d) Stop aeration

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Define aquaculture and explain its importance. (3)
3. Describe the reproductive biology of an important cultivable fish species. (3)
4. Explain the role of environmental factors in fish reproduction. (3)
5. Explain the importance of water quality management in hatcheries. (3)
6. Analyze the role of nutritional enrichment of live feed. (3)

OR

Analyze the importance of harvesting techniques in hatcheries. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Describe chromosomal polymorphism and its significance in fishes. (5)
8. Analyze raw water sources, contaminants and their effects on aquaculture productivity. (5)
9. Assess problems related to antibiotic and drug residues in aquaculture. (5)
10. Explain reproductive endocrinology in fishes. (5)
11. Explain the nutritional requirements of larvae and post-larvae in hatcheries. (5)
12. Evaluate physical and chemical characteristics of water influencing aquaculture productivity. (5)

OR

Assess the impact of aquaculture wastewater discharge on the environment. (5)
