

FAQ 312- Shellfish Breeding and Hatchery Management (2+1)

I. Write short answers (50 to 100 words): Each carries 3 marks

1. What are the commercially important shrimp species in India?
2. Name the micro algal species used in the rearing of shrimp larvae
3. What are the common disinfectants used in the shellfish hatcheries?
4. Mention the role of feed in the maturation and spawning of the shellfishes
5. What is the natural habitat of the prawns and how it is relevant in the culture and seed production of the prawns?
6. What are the larval stages of shrimps and duration of their development?
7. What is the gland that is responsible for regulating moulting in shrimp?
8. Where the openings for release of the gametes in crustaceans present?
9. What is the portion of the eye that is normally removed for speeding maturation?
10. What is the name of the process by which oysters take in water? How?
11. What is the name of the female prawn carrying eggs?
12. What is Y- organ and where it is present?
13. What are the common lobster species available in India?
14. What are the internal stimuli in shrimp that induce moulting?
15. List down the advantages of the natural seeds over hatchery seeds
16. What is brine shrimp and where it is used?
17. Why hatcheries are to be biosecured?
18. What is vertical transmission of diseases in hatchery?
19. List out commercial molluscan species for which seed production is known?
20. What are basic precautions to be adopted when transporting the brood stock?
21. Where the PL of the shrimps can be collected and why?
22. What are the secondary sexual characters / organs in shrimps that help in the identification of the sexes?
23. What is eye stalk ablation and why it is done?
24. What are the commercially important crab species in India?
25. What is the natural habitat of the shrimps and how it is important in the seed collection?

26. What is referred as bihormonal action in shrimp endocrinology?
27. Where do shrimps breed?
28. What is the total duration of larval cycle for freshwater prawns?
29. How female prawns can be identified?
30. Why Artemia is considered as the best larval feed?
31. Why PL of shrimps come to the estuaries?
32. What is the hormone responsible for promoting moulting?
33. Where the gonopore of male prawn is located?
34. What are the two types of Thelycum in shrimps?
35. What is the most important parameter for the best larval feed? Why?
36. How will you identify the PL of black tiger shrimp?
37. What is X- organ complex and where it is present?
38. What are the common holothurians species available in India?
39. What are the external factors responsible for shrimp maturation?
40. List down the advantages of the natural feeds over artificial feeds
41. What is rotifer and where it is used?
42. Which will decide the migration in shrimps?
43. Where does Giant freshwater prawn breed?
44. How many larval stages are there in crabs?
45. What are the different types of brooder tanks?
46. What is JH and where it is present?
47. Which will decide the mating in closed thelycum species?
48. How many larval stages are there in giant freshwater prawn?
49. What is the gland that is present in thoracic ganglia of shrimps?
50. What are the different types of live feeds that are used in the shrimp hatcheries
51. Shrimp larvae migrate to estuary. Why?
52. GIH delays moulting in crustaceans. How?
53. Moulting in shrimps is necessary for mating in certain species. Why?
54. The seminal vesicle is present in crabs. What is the purpose?
55. Diseases can be prevented in the hatcheries. How?

II. Write answers in paragraph (100 to 150 words): Each carries 5 marks

1. How seeds can be collected from the natural waters?
2. What are the natural resources of India with respect to the shellfish seeds?
3. What are the negative aspects of the brood stock transportation?
4. Describe the qualities of oyster brood stock
5. What are the advantages of hatchery produced seeds?
6. What is the natural habitat of the shrimps and how it is important in the seed collection?
7. What is referred as Activator – modulator – inhibitor action in shrimp endocrinology?
8. What are the intrinsic factors (present within the body) influence the breeding in the crustaceans?
9. Life cycle of a penaeid shrimp
10. Write an account on sexual dimorphism in crab
11. What are the extrinsic factors (present outside the body) influence the breeding in the crustaceans?
12. What are the different types of larval stages in pearl oyster
13. Describe life cycle of crabs
14. What are the basic reasons for the treatment of water in the hatchery?
15. What is a biofilter?
16. What is a demand feeder?
17. What is the basic principle of mechanical filters?
18. What are the advantages in the estuary for the larvae of the shell fishes
19. How the maturity can be identified in the shrimps?
20. Name the common live feeds that are used in the rearing of prawn larvae
21. What are the larval stages of shrimps and duration of their development
22. What are the advantages of induced maturation in shrimps?
23. Describe the characters of pearl oyster brood stock
24. Why Oyster seed production is not developed well in India?
25. What are common diseases that are seen in shrimp hatchery?
26. Life cycle of a palemon prawn

27. What are the basic rules in the larval feeding?
28. Write about Mud crab seed production
29. Explain the larval rearing method of oysters with special reference to the establishment of the hatchery
30. Write about the site selection, designing, and establishment of hatchery for giant prawns.
31. Describe the Spawning migration in shrimps
32. How will you differentiate the sexes in penaeids?
33. Why hatchery is required for the crustaceans?
34. Draw and comment on the life cycle of holothurian
35. Write about the breeding physiology of *Macrobrachium rosenbergii*
36. Write an account on freshwater prawns that are found in India?
37. What are the different types of Thelycum and their relevance in the breeding in shrimps?
38. Temperature influences the growth and maturation in crustaceans— Explain
39. Molluscs larvae are to be fed with micro algae. Why?
40. Seasonal variation of seed availability influences the farming. How?
41. Comment on the seed production in pearl oyster
42. Describe about the quarantine in the hatcheries? Where and how it should be done?
43. List out the reasons for the non-development of lobster and crab seed production in India
44. What are the common features of the maturation tank and what do they imply?

III. Write answers in paragraph (300 to 500 words): Each carries 15 marks

1. Discuss and describe the shellfish resources of India and chart out the measures for the development of shellfish fishery in the country
2. Describe the site selection and design aspects of a hatchery for 10 million shrimp seed production.
3. Write about Mud crab seed production

4. Explain the larval rearing method of oysters with special reference to the establishment of the hatchery
5. Write about the site selection, designing, and establishment of hatchery for giant prawns.
6. List out and discuss the differences between the larval rearing in shrimps and prawns with special reference to their feeds and feeding
7. Discuss in detail about the oyster seed production and spell out how live-feeds can be developed for the oyster larvae
8. Describe different components in a shrimp hatchery
9. Hormones control reproduction in shrimps - Describe
10. Describe breeding behaviour of *Macrobrachium* spp.
11. Compare the hatchery produced seeds and wild collected seeds.
12. Describe quality of eggs and development in molluscs
13. Describe the disinfection protocol in shell fish hatcheries
14. Hormones control reproduction in shrimps - Describe
15. Describe breeding behaviour of *Macrobrachium* spp.
16. Write about commercially important lobsters in India
17. Discuss in detail about the oyster seed production and spell out how live-feeds can be developed for the oyster larvae
18. Describe the structure of gonads in crustaceans