UG/II/AQM/H/III/17(Old)

2017

AQUACULTURE MANAGEMENT

[Honours]

PAPER – III

Full Marks : 90

Time : 4 hours

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

[OLD SYLLABUS]

1. Answer any *ten* question from the following : 2×10

(*a*) What do you mean by specific growth rate of fish ?

(*b*) Mention the composition of Bouin's fluid. State its uses.

(*c*) Give scientific name of one rotifer and one filamentous algae.

(*d*) What do you mean by epitope and paratope ?

(*e*) Define nitrifying bacteria with example.

(*f*) Define Net Protein Utilization (NPU %).

(*g*) Mention the important criteria of good fish feed.

(*h*) State about gram +ve bacteria an gram –ve bacteria with example.

(*i*) Define Co-enzyme. Give one example with its function.

(*j*) State the principle of a phase contrast microscope.

(*k*) Write the name of one viral and one fungal disease of *penaeus monodon*.

(*l*) What do you mean by water probiotics ? Give two examples of such probioties.

(*m*) State about structure of glycogen and pectin.

(*n*) What do you mean by facultative and heterotrophic bacteria with suitable example ?

(*o*) State about non-protein nitrogen.

GROUP – A

2. Answer *two* from the following question : 10×2

(*a*) (*i*) What do you mean by natural food and artificial feed ?

(*ii*) Discuss about the culture method of any bluegreen algae.

(*iii*) Add a note on natural food of *Catla catla* and *Cirrhinus mrigala*. $2 + 5 + 3$

(*b*) (*i*) Enlist different parasitic disease of Indian major carps with their causetive agent.

(*ii*) State about the general treatment method of fungal diseases.

(*iii*) Add a note on EUS. $4 + 3 + 3$

(*c*) (*i*) What do you mean by non-conventional fish feed resources ? Enlist them.

(*ii*) State about feed additive. Mention the name of different feed additive.

(*iii*) Prepare a 35% protein containing 1 ton fish feed using Soybean meal (CP = 52%) and Maize meal (CP = 18%) with the square method. 3 + 3 + 4

(*d*) (*i*) Discuss on the different steps in fish health management.

(*ii*) Add a note on nutritional diseases of fish. 6 + 4

3. Answer any *one* of the following question : 15 × 1

(*a*) (*i*) Mention the names of essential amino acids.

(*ii*) Classify the carbohydrates with example.

(*iii*) Add a note on food pigments.

(*iv*) State the vitamin requirement in fish feed. 3 + 6 + 4 + 2

(*b*) (*i*) What is 'Ich' disease ? Mention its causetive agent and treatment.

(*ii*) Briefly describe the symptoms, prophylactic measures and probable treatment of white spot disease of *Penaeus monodon*.

(*iii*) State about feeding management of a shrimp farming pond. 3 + 6 + 6

GROUP – B

4. Answer *two* questions from the following : 10 × 2

(*a*) (*i*) Define resolving power of a microscope.

(*ii*) Mention the name of different microscope.

(*iii*) Discuss about different parts of a light microcope. 3 + 3 + 4

(*b*) (*i*) Write down the characteristics of an enzyme.

(*ii*) Discuss about the pH and temperature affecting the enzyme activity.

(*iii*) State about different steps of Glycolysis. 2+4+4

(*c*) (*i*) State about phases of growth of a bacteria.

(*ii*) How bio-chemical factors affecting bacterial growth ?

(*iii*) Add a note on synthetic media for bacteria culture. 3+5+2

(*d*) (*i*) What are the different characteristics of a fungus ?

(*ii*) Classify bacteria on the basis of its structure.

(*iii*) Discuss about the cellmediated immunity of a fish. $2\frac{1}{2}+3+4\frac{1}{2}$

5. Answer any *one* of the following : 15 × 1

(*a*) (*i*) Classify the micro-organism.

(*ii*) Why sterilization is needed in a micro-biology Laboratory ?

(*iii*) Discuss about plate count method of bacteria. 3 + 5 + 7

(*b*) (*i*) Define primary stain and counter stain.

(*ii*) Discuss about the gram staining process of bacteria.

(*iii*) State on the role of microbes in nutrient cycling in aquatic food chain. 3 + 5 + 7
