

Ph.D ENTRANCE EXAMINATION, APRIL 2021**AQUACULTURE AND FISHERY MICROBIOLOGY**

Time : Two Hours

Maximum : 100 Marks

I. Answer *all* questions :

- 1 Which among the following is a traditional fishing craft of Kerala ?
 - (a) Inboard engine fitted canoe.
 - (b) Dugout canoe.
 - (c) Kattamaram.
 - (d) Trawler.
- 2 A dense mat of aquatic plant and micro animal communities that develops on the bottom of the culture ponds is :
 - (a) Lab-lab.
 - (b) Larva.
 - (c) Plankton.
 - (d) Eutrophication.
- 3 Expand SWOT :
 - (a) Strength Work Over Trade.
 - (b) Strength, Weakness, Opportunities and Trade.
 - (c) Strength, Weakness, Opportunities and Threats.
 - (d) Strength, Works Opportunities and Threats.
- 4 Which among the following is a marinated hard dried fish product ?
 - (a) Fish satay.
 - (b) Katsuobushi.
 - (c) Maldiv fish.
 - (d) Surimi.
- 5 Normal incubation period of eggs in the brood chamber of *Macrobachium rosenbergii* :
 - (a) 21–25 days.
 - (b) 11–15 days.
 - (c) 18–21 days.
 - (d) 1–10 days.
- 6 Culture systems for which all precautions are taken upto exclude disease organisms, the condition is :
 - (a) Casitas.
 - (b) Apoptis.
 - (c) Raking.
 - (d) Biosecure.

Turn over

- 7 Spiracles are the characteristics of _____ species.
- (a) Teleosts. (b) Craniata.
(c) Agnata. (d) Elasmobranchs.
- 8 FAO accepted code of conduct for responsible fisheries in the year :
- (a) 1985. (b) 1990.
(c) 1995. (d) 2000.
- 9 Freeboard is a term with reference to the construction of :
- (a) Dyke. (b) Spilway.
(c) Screen. (d) Sluice.
- 10 Kerala Marine Fisheries Regulation Act was introduced in :
- (a) 1980. (b) 1988.
(c) 1990. (d) 1998.
- 11 Fish farmers day celebrated on :
- (a) July 4. (b) July 10.
(c) July 21. (d) July 29.
- 12 Pearl bank in the Gulf of Mannar is known as :
- (a) Khaddas. (b) Beels.
(c) Paars. (d) Bundh.
- 13 Acid used in fish silage preparation is :
- (a) Formic acid. (b) Benzoic acid.
(c) Acetic acid. (d) Tartaric acid.
- 14 Minimum botulinm cook is _____ Minutes.
- (a) 2.50 minutes. (b) 2.51 minutes.
(c) 2.52 minutes. (d) 2.55 minutes.
- 15 State fish of Kerala is _____.
- (a) Tilapia. (b) Pangasius.
(c) Pearl spot. (d) Sardine.

- 16 Index of bacterial spoilage in seafood is _____.
- (a) TVBN. (b) TMAN.
(c) PV. (d) TBARS.
- 17 Tolerance of Salmonella in seafood as per USFDA standard is :
- (a) 1 per g. (b) 10 per g.
(c) 30 per g. (d) Nil.
- 18 Larval form of lobster is :
- (a) Phyllosoma. (b) Megalopa.
(c) Veliger. (d) Mysis.
- 19 *Trachinotus blochii* is _____.
- (a) Golder Ghol fish. (b) Silver belly.
(c) Silver Pompano. (d) Seabass.
- 20 Peasoup green colour of water is normally associated with this alage :
- (a) Microcystis. (b) Anabaena.
(c) Euglena. (d) Spirogyra.
- 21 Early mortality syndrome affects in :
- (a) Indian Major Carps.
(b) *Macrobrachium rosenbergii*.
(c) *Penaeus vannamei*.
(d) *Penaeus monodon*.
- 22 Instrument used to measure turbidity of water :
- (a) Barometer. (b) Refractometer.
(c) Thermometer. (d) Sechhi disc.
- 23 Which among the following is used for induced breeding ?
- (a) Ovaprim. (b) Ovatide.
(c) Ovapellet. (d) All the above.

24 IHN is a :

- (a) Bacterial disease.
- (b) Fungal disease.
- (c) Viral disease.
- (d) Protozoan disease.

25 True pearl oyster of Indian seas are :

- (a) *Meritrix meritrix*.
- (b) *Pinctada fucata*.
- (c) *Trochus niloticus*.
- (d) *Pinctada margaritifera*

26 Faecal indicator organism is—————.

- (a) Shigella.
- (b) *S. aureus*.
- (c) *E. coli*.
- (d) *V. parahaemolyticus*.

27 *Clostridium botulinum* is a :

- (a) Psychrophile.
- (b) Mesophile.
- (c) Thermophile.
- (d) Acidophile.

28 Sulphur containing amino acid is—————.

- (a) Lysine.
- (b) Leucine.
- (c) Methionine.
- (d) Tryptophan.

29 Extremely long chain unsaturated fatty acids are more in :

- (a) Shrimps.
- (b) Tunas.
- (c) Sardines.
- (d) Bombay duck.

30 *Sporendonema epizoium* causes :

- (a) Pink spoilage.
- (b) Rust spoilage.
- (c) Bacterial spoilage.
- (d) Dun spoilage.

31 Head quarters of CIFRI :

- (a) Cochin.
- (b) Buvaneshwar.
- (c) Nainital.
- (d) Barrackpore.

- 32 2-amino 6-oxy purine is _____.
- (a) Collagen. (b) Guanine.
(c) Maws. (d) Pearl essence.
- 33 Largest brackish water lake :
- (a) Hooghly-Matla lake. (b) Chilka lake.
(c) Vembanad lake. (d) Ashtamudi lake.
- 34 Feraka Barrage is on :
- (a) River Yamuna. (b) River Kaveri.
(c) River Godavari. (d) River Ganga.
- 35 Permitted chlorine level in seafood process water is _____.
- (a) 0 ppm. (b) 2 ppm.
(c) 5 pmm. (d) 10 pmm.
- 36 Histamine forming bacteria :
- (a) *Bacillus cereus*. (b) *Hafnia alvae*.
(c) *Lactobacillus planatrum*. (d) None of the above.
- 37 Acid sulphate soil contains :
- (a) Pyrites. (b) Bentanites.
(c) Zeolites. (d) Both (a) and (b).
- 38 Largest importer of Seafoods in the world :
- (a) USA.
(b) EU countries.
(c) Southeast Asian countries.
(d) China.
- 39 Food Safety and Standard Act came in :
- (a) 2005. (b) 2006.
(c) 2007. (d) 2008.

40 Example for a submerged aquatic weed :

- (a) Vallisnaria. (b) Typha.
(c) Ipomoea. (d) Lemna.

41 *Clenopharyngodon idella* is _____.

- (a) Silver carp.
(b) Common carp.
(c) Grass carp.
(d) Chinese carp.

42 Mahua oil cake contains _____.

- (a) Rotinone. (b) Saponine.
(c) Derris root powder. (d) Aldrin.

43 Area of Indian EEZ is _____.

- (a) 2.02 m sq km. (b) 2.20 m sq.km.
(c) 7148 km. (d) 590 km.

44 As per the latest FAO data (FAO 2020), India's contribution on World aquaculture fish production is about

- (a) 2.5 %. (b) 4.4 %.
(c) 8.8 %. (d) 15 %.

45 Fresh water white spot disease in fishes is caused by :

- (a) *Ichthyophthirius multifiliis*.
(b) *Ichthyo bodonecator*.
(c) WSSV.
(d) *Oodinium*.

46 Scoliosis in fishes is due to the deficiency of _____ Amino acid.

- (a) Methionine. (b) Valine.
(c) Tyrosine. (d) Tryptophan.

- 47 Matsya samridhi programme monitored and implemented by :
- (a) NFDB.
 - (b) Ministry of Fisheries, Government of India.
 - (c) Department of Fisheries, Government of Kerala.
 - (d) CMFRI.
- 48 Species showing discontinuous distribution in India :
- (a) *Leognathus dussumieri*.
 - (b) *Heterocarpus woodmasonii*.
 - (c) *Rastrelliger kanagurta*.
 - (d) *Harpadon nehereus*.
- 49 Chemical name of struvite is _____.
- (a) Magnesium ammonium phosphate penta hydrate.
 - (b) Magnesium ammonium phosphate hexa hydrate.
 - (c) Magnesium ammonium phosphate octa hydrate.
 - (d) Magnesium ammonium phosphate tetra hydrate.
- 50 Which of the following ice is preferred during seafood processing.
- (a) Block ice.
 - (b) Tube ice.
 - (c) Crushed ice.
 - (d) Flake ice.

(50 × 1 = 50 marks)

II. Write short notes on any *ten* of the following :

- 1 Marine protected areas.
- 2 Name four mangrove species and write the ecological importance of mangrove vegetations.
- 3 Bacterias of public health significance in seafoods.
- 4 Differentiate biofloc and recirculatory aquaculture systems.
- 5 Principles and logic sequence of HACCP.
- 6 FAO's Code of Conduct for Responsible Fisheries.

Turn over

- 7 Reasons for seasonal fluctuations in pelagic fish landings.
- 8 Migration in fishes.
- 9 Essential amino acids and essential fatty acids.
- 10 Bacterial diseases in fish.
- 11 Biotoxins in seafoods.
- 12 Hatchery seed production of *Macrobrachium rosenbergii*.

(10 × 5 = 50 marks)

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