Entrance Exam

2024



QUESTION PAPER

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FISHERIES

1. An example for larvicidal fish is

   (A) *Gambusia affinis*
   (B) *Tilapia mossambicus*
   (C) *Catla catla*
   (D) *Cirrhinus cirrhosus*

2. Dry ice refers to

   (A) Solid CO_2
   (B) Solid NH_4
   (C) Liquid CO_2
   (D) Liquid NH_4

3. Thermal conductivity of frozen fish is

   (A) Same as fresh water
   (B) Lower than the fresh water
   (C) Higher than the fresh water
   (D) Equal to marine water

4. During freezing of fish, maximum ice crystal formation zone lies between

   (A) -55˚C to -60˚C
   (B) -6˚C to -10˚C
   (C) -1˚C to -5˚C
   (D) +1˚C to +5˚C

5. RNA virus infecting cultured shrimp (*P. monodon*) is

   (A) WSSV
   (B) MBV
   (C) YHV
   (D) IHHNV

6. During ice storage, the spoilage of fish is mainly due to the activity of

   (A) Psychrophilic bacteria
   (B) Mesophilic bacteria
   (C) Thermophilic bacteria
   (D) Thermoduric bacteria

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7. The genome of WSSV contains

(A) dsDNA
(B) mRNA
(C) RNA
(D) siRNA

8. In ion exchange chromatography, molecules are separated based on

(A) Affinity
(B) Net charge
(C) Charge mass ratio
(D) Size

9. Cell death means

(A) Necrosis
(B) Neoplasia
(C) Atrophy
(D) Metaplasia

10. Karyolysis refers to

(A) Cell membrane
(B) RBC
(C) Cell nucleus
(D) All of the above

11. Biofiltration of water decreases

(A) Copper
(B) NH_3
(C) Oxygen
(D) CO_2

12. The nitrogen base unique to RNA is

(A) Cytosine
(B) Uracil
(C) Guanine
(D) Thymine

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13. Green mussels attach themselves to the rock by means of

(A) Peduncle
(B) Foot
(C) Byssus threads
(D) Byssus glands

14. Hypalmyroplankton refers to

(A) River plankton
(B) Lake plankton
(C) Brackish water plankton
(D) Seawater plankton

15. Bombay duck is mostly fished by

(A) Dol net
(B) Cast net
(C) Traps
(D) None of the above

16. The largest Otolith that is used for age determination of fish is

(A) Asteriscus
(B) Sagittal
(C) Lapillus
(D) None of the above

17. Adult *Mylopharyngodon* sp feeds on

(A) Zooplankton
(B) Snails
(C) Phytoplankton
(D) Weeds

18. Pearl essence is extracted from the……..of fishes

(A) Fins
(B) Bones
(C) Scales
(D) Skin

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19. *Potamogeton* is an example of

(A) Emerging weeds
(B) Floating weeds
(C) Submerged weeds
(D) Marginal weeds

20. *Catla catla* is

(A) Surface and zooplankton feeder
(B) Columnar and zooplankton feeder
(C) Surface and phytoplankton feeder
(D) Columnar and phytoplankton feeder

21. Phyllosoma is the larvae of

(A) Lobster
(B) Crab
(C) Squilla
(D) Shrimp

22. The largest fish belongs to the genus is

(A) *Rhyncodon*
(B) *Pristis*
(C) *Monta*
(D) *Carcharinus*

23. Discontinuous lateral line is noticed in fishes included in the family

(A) Carangidae
(B) Belonidae
(C) Cichlidae
(D) Clupeidae

24. Pharyngeal teeth is present only in

(A) Carps
(B) Parrot fish
(C) Mullets
(D) Cat fishes

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25. Scientific name of Grey mullet is

(A) *Mugil cephalus*
(B) *Mugil macrolepis*
(C) *Liza parsia*
(D) *Velamugil seheli*

26. An example of toxic blue green algae is

(A) *Microcystis*
(B) *Macrocystis*
(C) *Spirulina*
(D) *Oscillatoria*

27. The causative agent of whirling disease in fish is

(A) *Myxobolus cerebralis*
(B) *Kudoa sp.*
(C) *Microsporidia*
(D) *Icthyoptherius multifilis*

28. Fish louse is a common name for

(A) *Argulus*
(B) *Lernaea*
(C) *Trichodinella*
(D) *Ergasilus*

29. The element copper is an integral part of

(A) Haemoglobin
(B) Haemocyanin
(C) Myoglobin
(D) Methaemoglobin

30. The shrimp which completes its life cycle exclusively in sea is

(A) *Penaeus indicus*
(B) *Metapenaeus dobsoni*
(C) *Parapeneopsis stylifera*
(D) *Penaues mondon*

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31. A carcinogen present in smoked fish is

(A) Phenol
(B) 3,4- Benzopyrene
(C) Melanaldehyde
(D) Histamine

32. The Headquarters of FSSAI is located at

(A) New Delhi
(B) Cochin
(C) Mumbai
(D) Kolkata

33. Rancidity in frozen fish occurs due to

(A) Oxidation of fat
(B) Bacterial action
(C) Enzyme in tissue
(D) Carbohydrate degradation

34. Fish maws is from

(A) Shark skin
(B) Shark fin
(C) Air bladder
(D) Scales

35. Fringed inferior mouth is a characteristic of

(A) Catla
(B) Rohu
(C) Mrigal
(D) Common carp

36. The fish in which seed production technology has been standardized in India is

(A) Milkfish
(B) Mullets
(C) Snappers
(D) Asian sea bass

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37. Most commonly used inducing agent (synthetic) for induced breeding of major carps

(A) Gibberellins
(B) Ova-FH
(C) Suprafact
(D) Ovaprim

38. Fish ponds with low pH should be treated with

(A) Mahua oil cake
(B) $KMnO_4$
(C) Bleaching powder
(D) Lime

39. Indian major carps breed in rivers mostly during

(A) Summer
(B) Autumn
(C) Winter
(D) Monsoon

40. Organisms which withstand wide range of salinity are called

(A) Stenohaline
(B) Mixohaline
(C) Oligohaline
(D) Euryhaline

41. The method used for the estimation of Nitrogen in fish feeds is

(A) Carius method
(B) Soxte method
(C) Kjeldhal method
(D) Diaphragm Electrode method

42. The scientific name of Grass carp is

(A) *Ctenopharyngodon idella*
(B) *Cyprinus carpio*
(C) *Hypophthalmichthys molitrix*
(D) *Poecilia reticulata*

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43. An example of encircling net is

(A) Purse siene
(B) Drag net
(C) Rampani
(D) Trammel net

44. The pH of sea water varies from

(A) 7.5 to 8.4
(B) 6.0 to 6.5
(C) 5.0 to 5.1
(D) 6.5 to 7.0

45. The causative agent of Enteric red mouth disease in fish is

(A) *Yersinia ruckeri*
(B) *V. anguillarum*
(C) *Edwardsiella tarda*
(D) *V. alginolyticus*

46. Winkler's method is a test to measure dissolved …… in water

(A) minerals
(B) oxygen
(C) organic matter
(D) ammonia

47. Site of protein synthesis in a cell is

(A) Mitochondria
(B) Ribosome
(C) Golgi complex
(D) Nucleus

48. Ionizing radiation permitted to use in food is

(A) Gamma rays
(B) Cosmic rays
(C) Ultra violet rays
(D) Beta rays

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49. *Tor putitora* is commonly known as

(A) Snow trout
(B) Brown trout
(C) Golden masheer
(D) Himalyan trout

50. Which of the following is not a passive capture gear for fishing?

(A) Trap nets
(B) Gill nets
(C) Cast nets
(D) Trammel net

51. Fish is a poor source of

(A) Retinol
(B) Calciferol
(C) Ascorbic acid
(D) Folic acid

52. The most dominant species of krill is

(A) *Sardinops sagax*
(B) *Engraulis ringens*
(C) *Euphasia superba*
(D) *Nemipterus japonica*

53. Operating temperature of a blast freezer is from

(A) -25^{o}C to -35^{o}C
(B) -30^{o}C to -40^{o}C
(C) -10^{o}C to -21^{o}C
(D) -45^{o}C to -50^{o}C

54. Scientific name of Indian shad is

(A) *Tenualosa ilisha*
(B) *Harpodon nehereus*
(C) *Sardinella longiceps*
(D) *Euphasia superba*

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55. Ambergris is produced by

(A) Whales
(B) Dolphins
(C) Shark
(D) Skates

56. Gelatin is the denatured form of

(A) Collagen
(B) Elastin
(C) Keratin
(D) Connectinin

57. *Clarius batrachus* is commonly called

(A) Singhi
(B) Butter cat fish
(C) Magur
(D) Fresh water shark

58. Beche de - mer is dried

(A) squid
(B) fish
(C) sea cucumber
(D) crab

59. Isinglass is employed in

(A) Preparation of wines
(B) Clearing of wines
(C) Distillation of wines
(D) Preservation of wines

60. An example for Anadromous fish is

(A) Eel
(B) Common carp
(C) Perch
(D) Salmon

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61. The scientific name of yellow fin tuna is

(A) *Katsuwonus pelamis*
(B) *Thunnus albacares*
(C) *Thunnus obesus*
(D) *Thunnus alalunga*

62. The distance from the top of the double seam to the base of the chuck wall radius

(A) Body hook
(B) Countersink depth
(C) Cover hook
(D) Seam length

63. Masmin is prepared from

(A) Squids
(B) Crabs
(C) Tuna
(D) Clams

64. The cell wall of gram positive bacteria is mainly composed of

(A) Petidoglycan
(B) Glycogen
(C) LPS
(D) Teichoic acid

65. The point or area inside the can where maximum heat lag occurs during heat processing is

(A) Hot spot
(B) Hot blog
(C) SHP or Cold spot
(D) Cold point

66. Epizootic Ulcerative Syndrome is caused by

(A) Bacteria
(B) Parasite
(C) Fungus
(D) None of the above

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67. Megalopa is associated with

(A) Octopus
(B) Crabs
(C) Star fish
(D) Shrimp

68. Polymerase chain reaction (PCR) was invented by

(A) Victor Hensen
(B) Carl Linnaeus
(C) Karry B Mullis
(D) N. Appert

69. Farakka barrage is built across the river

(A) Narmada
(B) Chambal
(C) Tapti
(D) Ganga

70. In VBGF, the value of t_o indicates

(A) Age of fish at capture
(B) Length of fish at Zero age
(C) Age of fish at zero length
(D) Age of fish at first maturity

71. The main causative agent of EUS in fish is

(A) *A. hydrophila*
(B) *A. invadens*
(C) *Achromobacter*
(D) *Aspergillus*

72. Catch per unit effort is generally assumed to be an index of

(A) Abundance
(B) Over exploitation
(C) Under exploitation
(D) Sustainable yield

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73. Occurrence of senile fish in a population indicates

(A) Over exploitation
(B) Under exploitation
(C) Migration
(D) None of the above

74. Migration from fresh water to marine water for reproduction is known as

(A) Anadromous
(B) Catadromous
(C) Amphidromous
(D) Potamodromous

75. Number of double bonds in arachidonic fatty acid is

(A) 4
(B) 1
(C) 5
(D) 6

76. In the context of fisheries management, consider the following scenarios:

(I) Implementation of a Total Allowable Catch (TAC) for a commercially important fish species
(II) Introduction of marine protected areas (MPAs) to conserve critical habitats
(III) Use of acoustic telemetry to track the movement patterns of fish populations

Which combination of strategies is likely to contribute most effectively to sustainable fisheries management?

(A) (I) only
(B) (II) only
(C) (III) only
(D) Both (I) and (II)

77. A fisheries biologist is studying the population dynamics of a fish species in a particular ecosystem. Which factor is least likely to be a primary driver of changes in the fish population size over time?

(A) Fishing pressure and harvest rates
(B) Climate-induced variations in water temperature
(C) Availability of suitable spawning habitats
(D) Predation by natural predators

78. When considering the freezing rate of fish, what impact does a slower freezing rate generally have on the quality of the fish?

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(A) Improved texture
(B) Reduced drip loss
(C) Enhanced cell structure
(D) Formation of larger ice crystals

79. In the context of fish diseases, what is a common histopathological feature associated with viral infections?

(A) Granuloma formation
(B) Inclusion bodies
(C) Caseous necrosis
(D) Eosinophilic infiltration

80. In the context of fish processing and preservation, which statement accurately describes the significance of water activity (aw) in relation to microbial stability and product quality?

(A) Higher water activity promotes microbial growth and enzymatic activity, leading to reduced shelf life
(B) Water activity has a negligible impact on lipid oxidation and rancidity in processed fish products
(C) Lowering water activity in fish products is primarily beneficial for texture and color preservation
(D) Water activity is inversely correlated with the rate of Maillard browning reactions in smoked fish



81. The water activity (aw) of a fish sample is determined to be 0.96. If the preservation method requires a water activity below 0.85 for effective storage, what percentage reduction (approx.) in water activity is needed to meet the preservation criteria?

(A) 7%
(B) 11%
(C) 20%
(D) 25%

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82. A fish preservation method claims to achieve a 3-log reduction in microbial load. If the initial microbial count in a fish sample is 1,000,000 CFU/g (colony-forming units

per gram), what would be the microbial count after applying this preservation method?

(A) 10 CFU/g
(B) 1,000 CFU/g
(C) 10,000 CFU/g
(D) 100,000 CFU/g

83. In a fish stock assessment model, the Schaefer production model is commonly used to estimate the maximum sustainable yield (MSY). Which of the following parameters is required for deriving the metric?

(A) Mean age of fish population
(B) Intrinsic growth rate of the population
(C) Length of individual fish
(D) All of the above

84. For intensive shrimp farming, if the influent water contains an ammonia nitrogen concentration of 5 mg/L and the biofilter is expected to reduce it to 0.5 mg/L before being discharged, what is the percentage removal of ammonia nitrogen by the biofilter?

(A) 30%
(B) 10%
(C) 90%
(D) 20%

85. If the culture tank has a volume of 100 cubic meters, an oxygen consumption rate of 0.2 g O_2/kg fish/day, and the desired dissolved oxygen level is 6 mg/L, what is the maximum stocking density (in kg/m³) of fish that can be sustained in the system without causing oxygen depletion? [Critical level is 2 ppm].

(A) 40
(B) 60
(C) 20
(D) 30

86. In the taxonomic classification of Sciaenidae, which anatomical feature is often used to differentiate between species and is known for its variation within the family?

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(A) Pectoral fin shape
(B) Lack of lateral line scales
(C) Absence of chin barbels
(D) Variation in swim bladder morphology

87. Which of the following is the most important adaptation for maintaining sustained high speed swimming for long distances in open ocean environments in case of tunas?

(A) Myoglobin-rich red muscle
(B) Rapid glucose metabolism
(C) Enhanced gill ventilation
(D) Stream lined body morphology

88. Which among these fishes is the smallest, in terms of body mass?

(A) *Trimmatum nanus*
(B) *Poecilia reticulata*
(C) *Paedocypris progentica*
(D) *Schindleria brevipinguis*

89. The minimum mesh size to be used in codend of a shrimp trawl used in Gujarat is

(A) 40 mm diamond
(B) 35 mm square
(C) 40 mm square
(D) 25 mm diamond

90. Individual Quick Freezing is best suited for

(A) Tuna whole
(B) Sciaenid whole fish
(C) small shrimps
(D) All of the above

91. Selective and differential media play a crucial role in isolating and identifying specific bacterial species. Which of the following characteristics best describes the purpose of differential media?

(A) Inhibits the growth of unwanted bacteria
(B) Allows the growth of a wide range of bacteria
(C) Enhances the growth of specific bacteria while providing a visible indicator for differentiation
(D) Provides nutrients for the growth of fastidious bacteria

92. The administration of pituitary gland injections is a strategic technique for inducing reproduction in certain fish species. Considering the physiological complexities

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involved, which statement best characterizes the primary purpose and mechanism of pituitary gland injections in fish?

(A) The injection stimulates the pituitary gland to produce growth hormones, enhancing overall size and market value
(B) It triggers the release of gonadotropic hormones, promoting gamete maturation and facilitating controlled reproduction
(C) Pituitary injections directly affect the fish's metabolic rate, optimizing feed conversion efficiency
(D) The injection serves as a vaccination method to bolster the fish's immune system against prevalent diseases

93. Which seaweed is commonly used in making dishes like "Sushi" in Japan?

(A) Kombu
(B) Laminaria
(C) Gracilaria lichenoides
(D) Nori

94. The most common turtle that congregates along the east coast of India for mass breeding is

(A) Green turtle
(B) Olive ridley
(C) Leatherback
(D) Loggerhead

95. According to the Second Global Marine Fisheries Discard by FAO (2005), estimated annual discards from global marine capture fisheries is

(A) 12 million tonnes
(B) 3.7 million tonnes
(C) 7.3 million tonnes
(D) 9.1 million tonnes

96. The ICAR- Directorate of Cold-Water fisheries Research is located at

(A) Bhimtal
(B) Dehradun
(C) Nainital
(D) Almora

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97. Multi-rig trawlers often use ……. for operating more than one trawl net

(A) Steel wire rope
(B) Outrigger boom
(C) Winch
(D) None of the above

98. What is the cutting rate required for shaping, if 40 meshes need to be removed from the side of a webbing having mesh depth of 100 meshes?

(A) 1N4B
(B) 3N4B
(C) 12N40B
(D) None of the above

99. Which of the following fishes is reported to have a low to moderate "climate vulnerability"?

(A) *Sardinella longiceps*
(B) *Rastrelliger kanagurta*
(C) *Decapterus russelli*
(D) *Harpadon nehereus*

100. In the deep ocean, the density of marine snow is influenced by various factors. Which of the following factors is **not** a significant contributor to the variability in marine snow density?

(A) Abundance of phytoplankton in surface waters
(B) Consumption and decomposition rates of organic matter during their descend
(C) Temperature gradients in the deep ocean
(D) Movement of material due to currents, both horizontal and vertical

101. In which year did the Government of India enact the Food Safety & Standards Act?

(A) 2006
(B) 1997
(C) 1981
(D) 1991

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102. The process of coastal upwelling is fundamentally linked to

(A) El Niño Southern Oscillation
(B) Madden-Julian Oscillation
(C) West African Monsoon
(D) Wind-driven Ekman Transport

103. What specific environmental factors primarily drive Diel Vertical Migrations, in the ocean, influencing the spatial and temporal dynamics of predator-prey relationships in pelagic ecosystems?

(A) Temperature gradients
(B) Light availability
(C) Diel vertical movement of prey
(D) All of the above

104. The ministry of Government of India that undertakes the Deep Ocean Mission is

(A) Ministry of earth sciences
(B) Ministry of Petroleum and Natural Gas
(C) Ministry of Fisheries, Animal Husbandry and Dairying
(D) None of the above

105. The famous synthetic LH-RHa used for spawning Indian major carps with brand name Ovaprim, is made by

(A) Wokhardt
(B) Hemmo Pharma
(C) Syndel laboratories
(D) None of the above

106. Which among the following is used as a cryoprotectant for cyropreservation?

(A) DMSO
(B) Ethylene glycol
(C) Trehalose
(D) All of the above

107. Number of species, for which Minimum Legal Size is stipulated in Kerala is

(A) 44
(B) 54
(C) 58
(D) 64

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108. Deeper water elasmobranchs are more vulnerable to fishing pressure, due to

(A) Slow growth and late maturity
(B) Low fecundity and rapid growth
(C) High fecundity and early maturity
(D) Fast growth and late maturity

109. The primary objective of using circle hooks in long line fishing operations is to

(A) to increase catchability
(B) prevent deep hooking
(C) Increase the efficiency
(D) All of the above

110. What is the weight of the fish of length 20 cm, if the given value of "a" = 0.008, and "b"= 3.00?

(A) 46 grams
(B) 27 grams
(C) 56 grams
(D) 64 grams

111. In ecosystem modeling using Ecopath, the factor which plays a crucial role in determining the trophic interactions and energy flow within a marine ecosystem is



(A) Initial biomass of top predators
(B) Spatial distribution of primary producers
(C) Connectivity of trophic groups within the food web
(D) Temporal variability in prey abundance

112. Which among the following best suits the actual progression in the metamorphosis of eels?

(A) Elvers – leptocephali – yellow eel
(B) Leptocephali – yellow eel – elvers
(C) Leptocephali – elvers – yellow eel
(D) None of the above

113. "Phumidis" are found in

(A) Astamudi lake
(B) Loktak lake
(C) Pulikat lake
(D) Dal lake

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114. Males appear in Daphnia populations, due to

(A) Change in water temperature
(B) Food deprivation
(C) Food abundance
(D) None of the above

115. Which of the following factors is specifically considered to determine the type of ponds for coastal pond farms?

(A) Availability of skilled and unskilled labor
(B) Maximum flood level in the last 10 years
(C) Land elevation relative to the tides
(D) Developmental plans for the region

116. What is the significance of restriction enzymes in genetic engineering and molecular biology?

(A) Used to replicate DNA molecules
(B) Involved in the polymerase chain reaction (PCR)
(C) Act as molecular scissors to cut DNA at specific locations
(D) Assist in the development of recombinant DNA molecules

117. What environmental factors contribute to the onset and progression of the summer southwest monsoon in the Indian subcontinent?

(A) High-pressure areas over the northwest parts of the Indian subcontinent
(B) Low-pressure areas over the Indian Ocean
(C) Earth's rotation causing deflection of air currents
(D) All of the above

118. What is the term that denotes the number of plasmid molecules in a single bacterial cell, and why are plasmids with larger numbers preferred for gene cloning?

(A) Copy number; They yield more of the cloned gene
(B) Plasmid count; They enhance stability
(C) Replication number; They prevent mutations
(D) Gene copy; They improve segregation

119. Select the fish species from which the gene responsible for imparting cold resistance was cloned, leading to the development of a cold-resistant variety in aquaculture

(A) Rainbow Trout (*Oncorhynchus mykiss*)
(B) Winter Flounder (*Pseudopleuronectes americanus*)
(C) Arctic Char (*Salvelinus alpinus*)
(D) Atlantic Salmon (*Salmo salar*)

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120. Which of the following synthetic media is suggested as the best for fish cell and tissue culture?

(A) McCoy's 5a
(B) Puck's medium
(C) Eagle's Minimum Essential Medium (MEM)
(D) Leibovitz L-15

121. Which statement accurately describes a key aspect of innate immunity?

(A) Shows specificity upon repeated encounters
(B) Involves antibodies from B cells
(C) Involves physical barriers as primary defense, and phagocytes
(D) All of the above

122. What is a key advantage of monoclonal antibodies produced through hybridoma technology?

(A) Low technology requirements and minimal training
(B) Constant and renewable source with identical batches
(C) High likelihood of cross-reactivity with other proteins
(D) Varied batches with diverse antibody types

123. The fishing boats of one of the following states were found ideally suited for mechanization during the first stage, leading to the successful mechanization of Lodhiyas and Machwas. Choose the correct answer

(A) West Bengal
(B) Maharashtra
(C) Tamil Nadu
(D) Gujarat

124. What does the term 'Port side' refer to, in ship orientation?

(A) The right-hand side when facing forward
(B) Intersection of stern profile and design water line
(C) Distance between the forward and aft perpendiculars
(D) The left-hand side when facing forward

125. The primary mechanism of preservation in Modified Atmosphere Packaging (MAP) is

(A) inhibition of enzymatic reactions, thus killing microbes
(B) reduction of temperature to reduce spoilage
(C) altering gaseous composition, creating unfavorable conditions for microbial growth
(D) increase in water activity to inhibit growth

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126. Which of the following is a primary effect of ionizing radiation on microbial cells during food irradiation?

(A) Formation of free radicals
(B) Protein denaturation
(C) Lipid oxidation
(D) Enzyme activation

127. What is the maximum concentration attainable in salt fish, corresponding to a saturated brine solution?

(A) 10%
(B) 18%
(C) 26%
(D) 32%

128. Which zone in extrusion processing is responsible for uniformly blending the dry preconditioned ingredients and injecting them into the extruder on a cooking-extrusion system?

(A) Input zone
(B) Kneading zone
(C) Cooking zone
(D) Output zone

129. The primary purpose of using organic solvents in the preparation of Fish Protein Concentrate (FPC) is to

(A) enhance the flavour
(B) remove lipids and water
(C) add colour
(D) increase protein content

130. The main structural difference between chitin and chitosan is

(A) the presence of glucosamine
(B) the type of hexose repeat unit
(C) the source of extraction
(D) the degree of acetylation

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131. What is the primary source of carrageenan, a water-soluble polysaccharide used in various industries?

(A) Green algae
(B) Brown algae
(C) Red algae
(D) Blue-green algae

132. What is a Critical Control Point (CCP) in HACCP?

(A) Point where minor deviations are acceptable
(B) Point where failure to control could result in defective/unsafe food
(C) Point where constant checking is not required
(D) Point only in raw material processing

133. Which is often the limiting nutrient in freshwater lakes during the natural process of eutrophication?

(A) Phosphorus
(B) Nitrogen
(C) Calcium
(D) Potassium

134. The key regions of solar radiation (electromagnetic radiation) utilized in remote sensing to identify features on the earth's surface are

(A) Ultraviolet and X-ray regions
(B) Infrared and microwave regions
(C) Radiofrequency and gamma-ray regions
(D) Visible and ultraviolet regions

135. When was the Coastal Regulation Zone (CRZ) notification finalized and issued in India?

(A) 1981
(B) 1986
(C) 1991
(D) 1997

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136. Which agreement sets out principles for the conservation and management of straddling fish stocks and highly migratory fish stocks beyond national jurisdiction?

(A) Convention on Fishing and Conservation of the Living Resources of the High Seas, 1958
(B) Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea
(C) United Nations Agreement for the Implementation of the Provisions of the Convention on Biological Diversity
(D) All of the above

137. Beverton–Holt model is primarily used in fisheries management for

(A) Estimating total fish population
(B) Assessing fishing patterns
(C) Predicting steady-state stock and yield
(D) Analysing fish recruitment

138. In ecological studies, the diversity index commonly used to measure how uniformly individuals are distributed among species is

(A) Pielou's Evenness Index
(B) Shannon-Wiener Diversity Index
(C) Relative Abundance Index
(D) Species Equitability Index

139. In oceanography, the term "compensation depth" refers to the depth at which a population of phytoplankton cells experiences a balance between photosynthetic gain and respiratory losses. Which of the following best describes the compensation depth?

(A) The depth at which photosynthesis ceases
(B) The depth where phytoplankton growth is maximal
(C) The depth at which oxygen production equals oxygen consumption
(D) The depth with the highest nutrient concentration

140. A product processed from the Sea Cucumbers found in tropical and temperate waters is

(A) Sea Biscuit
(B) Coral Gem
(C) Beche-de-mer
(D) Ocean Pearl

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141. In freshwater ecosystems, the profundal zone is a significant feature. What best characterizes the profundal zone?

(A) The area near the shoreline where rooted plants thrive
(B) The shallow region where light penetration is sufficient for photosynthesis
(C) The deep, light-deprived region in a lake or pond where oxygen levels may be lower
(D) The transitional zone between the littoral and limnetic zones

142. Which country has the largest mangrove resources, as reported by the Global Forest Resources Assessment (2020)?

(A) Australia
(B) Indonesia
(C) Bangladesh
(D) Mexico

143. In India, the cryopreservation and gene banking of fish reproductive cells are notably carried out by

(A) ICAR-CPCRI
(B) ICAR-CMFRI
(C) ICAR-CIFE
(D) ICAR-NBFGR

144. Karyotype analysis in fish aids in taxonomic differentiation and understanding evolutionary inter-relationships. What is the term specifically used to describe the application of karyotypes for taxonomic differentiation between different fish species?

(A) Cytotaxonomy
(B) Geno taxonomy
(C) Cytosystematics
(D) Chromosomal taxonomy

145. Which among the following types of fish mouth structures used in morphometric identification, is characterized by having both jaws equal and located in the middle of the head region?

(A) Sub Terminal Mouth
(B) Terminal Mouth
(C) Inferior Mouth
(D) Superior Mouth

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146. In the browning reactions of lean meat, one among the following proteins is primarily responsible for the extensive browning and the breakdown of its tetrapyrrole rings leads to the observed colour changes. Choose the correct option.

(A) Hemoglobin
(B) Collagen
(C) Myoglobin
(D) Actin

147. Which of the following statements about Basal Metabolic Rate (BMR) is incorrect?

(A) BMR is the largest fraction of the total energy requirements.
(B) BMR represents the amount of energy needed when the body is at complete rest
(C) The metabolism under BMR conditions occurs after a heavy meal
(D) It is measured as the number of Kcal liberated per square meter of body per hour

148. How does the vapour compression refrigeration system play a crucial role in the operation of ice-making plants?

(A) Compressing the refrigerant to produce mechanical energy
(B) By controlling the pressure in the evaporator coils
(C) Facilitates heat absorption in the condenser coils
(D) By regulating the flow of refrigerant in the receiver

149. What type of forces do transmission shafts in marine engines primarily experience?

(A) Bending and Twisting (Torsional) Forces
(B) Only Bending Forces
(C) Only Twisting (Torsional) Forces
(D) Radial Forces

150. Which international organization has established standards for good manufacturing practices (GMP) and good irradiation practices (GIP) for various foods, covering aspects such as treatment, handling, storage, and distribution?

(A) International Organisation for Standardization (ISO)
(B) International Food Safety Organization (IFSO)
(C) Codex Alimentarius Commission (CAC)
(D) World Trade Organization (WTO)

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ANSWER KEY

Subject Name: 608 FISHERIES

SI No.	Key	SI No.	Key	SI No.	Key	SI No.	Key	SI No.	Key
1	A	31	B	61	B	91	C	121	C
2	A	32	A	62	B	92	B	122	B
3	C	33	A	63	C	93	D	123	D
4	C	34	C	64	A	94	B	124	D
5	C	35	B	65	C	95	C	125	C
6	A	36	D	66	C	96	A	126	A
7	A	37	D	67	B	97	B	127	C
8	C	38	D	68	C	98	B	128	C
9	A	39	D	69	D	99	C	129	B
10	C	40	D	70	C	100	C	130	B
11	B	41	C	71	B	101	A	131	C
12	B	42	A	72	A	102	D	132	B
13	C	43	A	73	B	103	D	133	A
14	C	44	A	74	B	104	A	134	B
15	A	45	A	75	A	105	C	135	C
16	B	46	B	76	D	106	D	136	B
17	B	47	B	77	D	107	C	137	C
18	C	48	A	78	D	108	A	138	A
19	C	49	C	79	B	109	B	139	C
20	A	50	C	80	A	110	D	140	C
21	A	51	C	81	B	111	C	141	C
22	A	52	C	82	B	112	C	142	B
23	C	53	B	83	B	113	B	143	D
24	A	54	A	84	C	114	B	144	A
25	A	55	A	85	C	115	C	145	B
26	A	56	A	86	D	116	C	146	C
27	A	57	C	87	A	117	D	147	C
28	A	58	C	88	D	118	A	148	A
29	B	59	B	89	C	119	B	149	A
30	C	60	D	90	C	120	C	150	C

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- Lateral Entry