

MCQ for Fish Nutrition and Feed Technology

1. In fish, methionine is separated by.....

a.	Phenylalanine	b.	Cysteine
c.	Arginine	d.	Histidine

2. Play a vital role in biomembranes.

a.	Phospholipids	b.	Vitamins
c.	Amino acids	d.	Minerals

3. are a cheap natural sources of energy.

a.	Carbohydrates	b.	Lipids
c.	Proteins	d.	Fibres

4. fish species have poor ability to digest carbohydrates.

a.	Herbivorous	b.	Carnivorous
c.	Ominivorous	d.	Euryphagus

5. Deficiency of vitamin results in metabolic disorders and spinal deformities in fish.

a.	C	b.	A
c.	B	d.	K

6. Vitamin is required for normal blood clotting mechanism.

a.	A	b.	B
c.	D	d.	K

7. Presence of Adversely affects nutritional value of cotton seed cake.

a.	Phytates	b.	Urease
c.	Gossypol	d.	Glycosides

8. Is a precursor of chitin.

a.	Cystine	b.	Leucine
c.	Glucosinolates	d.	Lysine

9. are the most important substances which render colour to fish.

a.	Chemo attractants	b.	Feeding stimulants
c.	Growth promoters	d.	Carotenoids

10. protect the fatty acids from oxidation.

a.	Pigments	b.	Antimicrobial agents
c.	Antioxidants	d.	Anabolic agents

11. Fishes feeding on a variety of foods are called as fishes.

a.	Stenophagic	b.	Monophagic
c.	Euryphagic	d.	Carnivorous

12. Fishes feeding on a few selected types of foods are called as fishes.

a.	Stenophagic	b.	Monophagic
c.	Euryphagic	d.	Carnivorous

13. Fishes feeding on single type of food are called as fishes.

a.	Stenophagic	b.	Monophagic
c.	Euryphagic	d.	Carnivorous

14. type of food rarely enters the gut of fishes.

a.	Basic	b.	Secondary
c.	Incidental	d.	Obligatory

15. type of food is usually consumed by fishes and forms the main part of gut content.

a.	Basic	b.	Secondary
c.	Incidental	d.	Obligatory

16. type of food is frequently found in gut of fishes.

a.	Basic	b.	Secondary
c.	Incidental	d.	Obligatory

17. type of food is consumed by fishes only in the absence of basic food.

a.	Basic	b.	Secondary
c.	Incidental	d.	Obligatory

18. The gross energy levels of the nutrients are kcal/kg for lipids, Kcal/kg for proteins and kcal/kg for proteins and kcal/kg for carbohydrates.

a.	9450, 5650,4100	b.	8940, 5940, 3980
c.	5650,9450,4100	d.	5940, 8940, 3980

19. $DE = IE - \dots\dots\dots$

a.	ZE	b.	FE
c.	SE	d.	UE

20. Wet feeds contain moisture level in the range of %.

a.	25 to 45	b.	45 to 70
c.	70 to 90	d.	15 to 25

21. Moist feeds contain moisture level in the range of %.

a.	25 to 45	b.	45 to 70
c.	70 to 90	d.	15 to 25

22. Semi-moist feeds contain moisture level in the range of%.

a.	25 to 45	b.	45 to 70
c.	70 to 90	d.	15 to 25

23. Usually dry diets contain moisture level in the range of %.

a.	25 to 45	b.	45 to 70
c.	70 to 90	d.	15 to 25

24. The liquids or particulate dietary components enclosed in a micro-capsule are called as diets.

a.	Microcoated	b.	Microbound
c.	Microparticulate	d.	Microencapsulated

25. A powdered larval diet with a binder is called as

a.	Microcoated	b.	Microbound
c.	Microparticulate	d.	Microencapsulated

26. are non-energy yielding nutrients.

a.	Proteins	b.	Lipids
c.	Carbohydrates	d.	Vitamins

27. are the major as well as the most expensive components in fish/ crustaceans diet.

a.	Proteins	b.	Lipids
c.	Carbohydrates	d.	Vitamins

28. The complex of protein with carbohydrate is called as

a.	Lipoprotein	b.	Glycoprotein
c.	Metalloprotein	d.	None of above

29. In fishes, phenylalanine is spared by

a.	Methionine	b.	Tyrosine
c.	Lysine	d.	Isoleucine

30. fishes utilize lipids more effectively.

a.	Carnivorous	b.	Omnivorous
c.	Herbivorous	d.	None of the above

31. water soluble and Fat soluble vitamins are important in the diets of fishes.

a.	Four, eleven	b.	Eleven, four
c.	Five, eleven	d.	Eleven, five

32. Deficiency of vitamin results in reduced absorption of calcium from surrounding water by gills and skin.

a.	A	b.	C
c.	K	d.	E

33. Vitamin has a role as a visual pigment.

a.	A	b.	C
c.	K	d.	E

34. Vitamin is important as an anti-oxidant.

a.	E	b.	D
c.	B ₆	d.	K

37. are important to give strength and rigidity to bones in fishes.

a.	Proteins	b.	Lipids
c.	Vitamins	d.	Minerals

38. is a component of haeme in fish haemoglobin in fishes.

a.	Iron	b.	Copper
c.	Calcium	d.	Magnesium

39. is a component of haeme in crustacean haemocyanin.

a.	Iron	b.	Copper
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c.	Calcium	d.	Magnesium
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40. Cobalt is an essential component of vitamin

a.	B ₆	b.	B ₁₂
c.	A	d.	C

41. are essential to provide water stability to feeds.

a.	Binders	b.	Probiotics
c.	Anti-oxidants	d.	Chemo-attractants

42. are important in diets to improve feed intake.

a.	Binders	b.	Feeding stimulants
c.	Anti-oxidants	d.	Probiotics

43. Fungal growth in stored feed is very rapid when temperature exceeds °C and humidity exceeds %.

a.	10, 50	b.	25, 85
c.	40, 40	d.	35, 50

44. It is usually estimated that fat provides Kcal metabolizable energy (ME) per gramme.

a.	8.5	b.	9.5
c.	10.5	d.	7.5

45. Raw starch provides Kcal of metabolizable energy (ME) per gramme.

a.	2.5 – 3.0	b.	3.0 – 3.5
c.	1.2 – 2.0	d.	0.5 – 1.0

46. Protein has a metabolizable energy (ME) value of about Kcal per gramme for fish, which is higher than that of mammals and birds.

a.	3.0	b.	4.5
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c.	4.0	d.	5.0
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47. is an instrument used to measure heat production in fish and shellfishes.

a.	Respirometer	b.	Photometer
c.	Calorimeter	d.	Spectrophotometer

48. Vegetable oil mostly contains

a.	w-3 fatty acids	b.	w-6 fatty acids
c.	Both with more of w-3	d.	None of the above

49. Which one is not a disaccharide

a.	Sucrose	b.	Maltose
c.	Fructose	d.	All of the above

50. Starch gelatinization improves

a.	Stability of feed	b.	Digestibility
c.	Colour	d.	Palatability

51. Synthetic amino acids are

a.	Immune enhancers	b.	Chemo attractant
c.	Binders	d.	None of the above

52. Which one is synthetic amino acid?

a.	L Lysine	b.	DL Methionine
c.	Both a & b	d.	None of the above

53. Which is a natural antioxidant

a.	Vitamin A	b.	Vitamin C
c.	Vitamin E	d.	All of the above

54. Muddy smell in fishes caught from pond is due to

a.	Mud	b.	Geosmin
c.	Bad water quality	d.	All of the above

55. Instrument for measuring energy value is

a.	Bomb calorimeter	b.	Respirometer
c.	Both	d.	None of the above

56. Sucrose contains

a.	Glucose + Fructose	b.	Glucose + Glucose
c.	Galactose + Glucose	d.	None of the above

57. Glycogen as a storage polysaccharides occurs mostly in

a.	Liver	b.	Muscle
c.	Both a & b	d.	None

58. Change of diet from natural to formulated is known as

a.	Translation	b.	Weaning
c.	Transformation	d.	All of the above

59. Kries test evaluates

a.	Translation	b.	Weaning
c.	Transformation	d.	All of the above

60. Bile is produced by

a.	Pancreas	b.	Stomach
c.	Liver	d.	Intestine

61. Which is an non-essential amino acid

a.	Threonine	b.	Valine
c.	Phenylalanine	d.	Alanine

62. Which one is an imino acid

a.	Tyrosine	b.	Glycine
c.	Proline	d.	Serine

63. Which one is a sulphur containing non-essential amino acid

a.	Tyrosine	b.	Cysteine
c.	Methionine	d.	Serine

64. Pyridoxine is

a.	Vit B ₁	b.	Vit B ₂
c.	Vit B ₆	d.	Vit B ₁₂

65. Micro-encapsulated feed is more advantages because

a.	They do not pollute water	b.	Efficient nutrients delievery
c.	Handling is easy	d.	Storage is easy

66. Bioavailability of phosphorus in fish meal determined by

a.	Presence of intestine	b.	Presence of stomach
c.	Independent of any factor	d.	Temperature of the culture environment

67. Selenium is a part of the antioxidant enzyme

a.	Glutathione peroxidases	b.	Catalase
c.	Superoxide dismutase	d.	Glutathione S transferase

68. Flesh quality of fish is enhanced by

a.	Carotenoids	b.	Antioxidants
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c.	Low fat diet	d.	Both a & b
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69. Moisture content in wet feed is about

a.	30-45%	b.	45-70%
c.	80%	d.	90%

70. For preparation of extruded dry pellets, temperature range required is

a.	< 100°C	b.	110°C
c.	125 - 150°C	d.	> 150°C

71. Shelf life of fish feeds depends on

a.	Temperature	b.	Humidity
c.	Light	d.	All of the above

72. Aflatoxin B is due to

a.	<i>Aspergillus flavus</i>	b.	<i>Aspergillus fumigatus</i>
c.	<i>Aspergillus ustus</i>	d.	<i>Aspergillus lentulus</i>

73. Mimosine (thyroxine antagonist) is present in

a.	Ipil Ipil	b.	Cotton seed
c.	Rubber seed	d.	All of the above

74. Optimum level of fibre in fish feed should be

a.	> 5%	b.	8-12%
c.	15-18%	d.	18-20%

75. Energy released as heat when a substance is completely oxidized to CO₂, NO₂ and water is known as

a.	Gross energy	b.	Metabolizable energy
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c.	Digestible energy	d.	Net energy
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76. Storage polysaccharide in animal is

a.	Chitin	b.	Glycogen
c.	Fructose	d.	All of the above

77. Feeder type used for very large water bodies is

a.	Drop feeder	b.	Augar feeder
c.	Pneumatic feeder	d.	Disc feeder

78. HCl is secreted by

a.	Stomach	b.	Gastric gland
c.	Both a & b	d.	Liver

79. Conversion of trypsinogen into trypsin occurs under the influence of

a.	Acidic pH	b.	Neutral pH
c.	Basic pH	d.	Independent of pH

80. Site for production of proteases is

a.	Liver	b.	Stomach
c.	Bile	d.	Pancreas

81. Protein digestion occurs in

a.	Small intestine	b.	Large intestine
c.	Stomach	d.	All of the above

82. Lipolysis of a triglyceride molecule results in

a.	Three molecules of fatty acids	b.	Three molecules of fatty acids and glucose
c.	Three molecules of fatty acids and glycerol	d.	Three molecules of fatty acids and glycogen

83. Commonly used external markers for digestibility studies is

a.	Cr ₂ O ₃	b.	FeO ₂
c.	SiO ₂	d.	None of the above

84. Sulphur containing EAA is

a.	Leucine	b.	Arginine
c.	Lysine	d.	Methionine

85. Most critical Amino acid in fish diet

a.	Leucine	b.	Arginine
c.	Lysine	d.	Methionine

86. Nutrient deficiency diseases , scoliosis and lordosis disease is due to lack of

a.	Vitamin A	b.	Vitamin B
c.	Vitamin C	d.	Vitamin K

87. A molecule of glucose on complete oxidation produces

a.	30 ATP molecule	b.	36 ATP molecule
c.	38 ATP molecule	d.	40 ATP molecule

88. "Biological value" in fish nutrition studies relates to

a.	Nitrogen	b.	Lipid
c.	Carbohydrate	d.	Vitamin

87. Most powerful anti-nutritional factor present in plant ingredient is

a.	Phytic acid	b.	Trysin inhibitor
c.	Glucosinolates	d.	Haemagglutinins

88. Dark coloration in fishes is due to nutritional deficiency of

a.	Biotin	b.	Folic acid
c.	Choline	d.	Ascorbic acid

89. Dark coloration in fishes is due to nutritional deficiency of

a.	Biotin	b.	Folic acid
c.	Choline	d.	Ascorbic acid

90. Polyunsaturated fatty acid with formula 20:5 n3 refers to

a.	Linoleic acid	b.	Linolenic acid
c.	Eicosa-pentanoic acid	d.	Docosa-hexaenoic acid

91. Enrichment with w-3 fatty acids are mostly done in

a.	Pelleted feeds	b.	Dry feed
c.	Live feeds	d.	All of the above

92. Major storage lipid in fish is

a.	Triglycerides	b.	Phospholipids
c.	Sterols	d.	All of the above

93. Herbs are supplemented in fish diet in order to

a.	Improve storage	b.	Immune enhancement
c.	Stability	d.	All of the above

94. Lecithin in soybean

a.	Improves lipid digestibility	b.	Improves carbohydrate digestibility
c.	Reduce lipid digestibility	d.	Reduce carbohydrate digestibility

95. Vitamin-mineral interaction occurs between

a.	Ascorbic acid & Copper	b.	Vitamin D and Calcium
c.	Ascorbic acid & Iron	d.	All of the above

96. Mimosine content in plant feed ingredient can be reduced by

a.	Soaking	b.	Boiling
c.	Drying	d.	Grinding

97. During feed preparation, Vit C can be protected by

a.	Extrusion	b.	Encapsulation
c.	Esterification	d.	Both b &c

98. Bentonites are used in fish feed as

a.	Antifungal	b.	Fillers
c.	Binders	d.	All of the above

99. Time interval between ingestion and first appearance of faeces is known as

a.	Gut transit time	b.	Gut evacuation time
c.	Gastric evacuation time	d.	Gut residence time

100. Time taken for the entire quantity of food ingested to be voided

a.	Gut transit time	b.	Gut evacuation time
c.	Gastric evacuation time	d.	Gut residence time

Fill in the blacks

1. The gross energy of protein is
2. In glycolipids, lipids and carbohydrates attached to each other by help of a bond.
3. Proteins are composed mostly of amino acids linked withbond.
4. Butyric acid is type of fatty acid.

5. Presence of anti-nutritional factor adversely affects nutritional value of cotton seed cake.
6. fibrous protein is present in wool , hair and nails of mammals
7. is the most common steroid and is the precursor to vitamin D, testosterone, estrogen.
8. Amino acids are in nature
9. Any class of sugars that cannot be hydrolysed to give a simple sugar is known as
10. is the process by which the ingested food material is broken down in to simple, small, absorbable molecules
11. Proteolytic enzymes arise from inactive precursors known as
12. Tannins are type of compounds
13. Antivitamin D factor is present in
14. Study of balance between energy intake and energy utilization for life sustaining processes is known as
15. Thyroid tumor Caused due to deficiency
16. Nutritional gill disease is caused due to amino acid deficiency
17. Nutritional Anemia is caused by vitamin deficiency
18. Gossypol causes sudden anorexia and deposition of globules within liver and kidney
19. is measure of weight gain/unit protein fed
20. is reciprocal of FCR and convert in to per cent
21. ----- is the most common steroid and is the precursor to vitamin D, testosterone, estrogen.
22. $DE = \text{.....} - FE$
23. -----is the favorite natural feed of milk fish.
24. Vitamin has a role as a visual pigment.
25. Is a component of haeme in fish haemoglobin in fishes.
26. Cobalt is an essential component of vitamin
27. A powdered larval diet with a binder is called as.....
28. Vitamin is important as an anti-oxidant.