

ENTRANCE EXAMINATION FOR ADMISSION, MAY 2010.

Ph.D. (FOOD SCIENCE AND TECHNOLOGY)

COURSE CODE : 158

Register Number :

*Signature of the Invigilator
(with date)*

COURSE CODE : 158

Time : 2 Hours

Max : 400 Marks

Instructions to Candidates :

1. Write your Register Number within the box provided on the top of this page and fill in the page 1 of the answer sheet using pen.
2. Do not write your name anywhere in this booklet or answer sheet. Violation of this entails disqualification.
3. Read each question carefully and shade the relevant answer (A) or (B) or (C) or (D) in the relevant box of the ANSWER SHEET using HB pencil.
4. Avoid blind guessing. A wrong answer will fetch you -1 mark and the correct answer will fetch 4 marks.
5. Do not write anything in the question paper. Use the white sheets attached at the end for rough works.
6. Do not open the question paper until the start signal is given.
7. Do not attempt to answer after stop signal is given. Any such attempt will disqualify your candidature.
8. On stop signal, keep the question paper and the answer sheet on your table and wait for the invigilator to collect them.
9. Use of Calculators, Tables, etc. are prohibited.

1. The causative agents of bronchiolitis and pneumonia in infants are
(A) Parainfluenza viruses (B) Respiratory syncytial viruses
(C) Caronaviruses (D) Human rhinoviruses
2. Infections of the skin and nails on fingers and toes are caused by
(A) *Epidermophytonfloccosum* (B) *Microsporium audocinii*
(C) *Trichophylon rubrum* (D) *Microsproum gypseum*
3. Motile sporangiospores are
(A) Aplanospores (B) Conidiospores
(C) Zoospores (D) Arthospores
4. Small aquatic form making up a large part of the free-floating microscopic life in water are known as
(A) Plankton (B) Phytoplankton
(C) Zooplankton (D) All of these
5. A type of kerato conjunctivitis that often results in blindness is
(A) *Chalmydia trachomatis* (B) *Bacillus diptheriai*
(C) *Coxicilla burnetic* (D) *Xeropsylla chropis*
6. The causative agent of primary urethritis in human
(A) Mycoplasma (B) Ureaplasma
(C) Acholeplasma (D) Spiroplasma
7. Which one causes sore throat, scarlet fever, and other human infections?
(A) *Streptococcus pyogenes* (B) *Streptococcus mutans*
(C) *Streptococcus faecalis* (D) *Streptococcus pneumonia*
8. Non contagious tuberculosis - like infections are caused by
(A) *Mycobacterium tuberculosis* (B) *Mycobacterium intracelluaris*
(C) *Mycobacterium kansasi* (D) *Mycobacterium leprae*
9. All the organized chemical activities performed by
(A) Catabolism (B) Anabolism (C) Metabolism (D) Germination

10. A frequent cause of gastro enteritis in children
(A) *Proteus mirabilis* (B) *Yersinia pestis*
(C) *Yersinia enterocolitica* (D) *Escherichia coli*
11. Urinary tract infections in human may be caused by
(A) *Yersinia enterocolitica* (B) *Proteus mirabilis*
(C) *Escherichia coli* (D) *Enterobacteriaceae*
12. Which is a pathogen of marine fish and eels?
(A) *Vibrio fisheri* (B) *Vibrio cholerae*
(C) *Vibrio parahaemolyticus* (D) *Vibrio anguillarum*
13. A leading cause of meningitis in children is
(A) *Pasteurella multocida* (B) *Haemophilus influenzae*
(C) *Actinobacillus lignieresii* (D) *Actinobacillus suis*
14. A condiment made from sugary materials by an alcoholic fermentation is
(A) Vinegar (B) Yeast
(C) Sugar crystals (D) All the above
15. Food-borne illness caused by the presence of a bacterial toxin formed in the food
(A) Bacterial food intoxication (B) Bacterial food infection
(C) Microbial food toxication (D) Microbial food poisoning
16. Aflatoxin is produced by
(A) *Aspergillus flavus* (B) *Aspergillus parasiticus*
(C) Both (A) and (B) (D) *Chlamydomonas*
17. Very small noncellular parasites are
(A) Algae (B) Bacteria (C) Viruses (D) Fungi
18. Normal cold storage done immediately after harvesting by use of a cold water spray is known as
(A) Chilling (B) Freezing
(C) Hydro cooling (D) Ultra freezing

19. Many vegetables can be dried by a process known as
(A) Intensive puffing (B) Explosive puffing
(C) Hydropuffing (D) Puffing
20. Brown rot is caused by
(A) Trichoderma (B) Tricho thecium
(C) Sclecrotinia (D) Asperigillus niger
21. Black spot in meat is caused by
(A) Cladosporium herabarum (B) Mucor mucedo
(C) Muccor racemosus (D) Thiamnidusm chactocladiodies
22. Green patches are caused in meat by
(A) Thamnidum (B) Penicullum
(C) Mucor (D) Mold
23. Fish that seem to decompose faster than normal fish is known as
(A) Canned fish (B) Feedy fish
(C) Dried fish (D) Shell fish
24. Picking of fish is done by means of
(A) Salt with vinegar
(B) Salt with spices
(C) Spiced with vinegar
(D) Salt, vinegar, spices and acidification
25. Spoilage of fish is caused by
(A) Pseudomonas flourescens (B) Acetino bacter
(C) Moraxilla (D) All of these
26. The term "Enzyme" was coined by
(A) James Sumner (B) William Kunhe
(C) Arther Harden (D) John Northop
27. Activation energy for hydrolysis of sucrose by H^+ ion is
(A) 260 cal/mol (B) 2600 cal/mol
(C) 26,000 cal/mol (D) 2300 cal/mol

28. Which metallo enzyme containing calcium
(A) Tyrosinase (B) Lecithinase (C) Hexokinase (D) Catalase
29. Which theory states that the structure of active site of enzyme is complimentary to substrate?
(A) Koshlands Induced fit theory (B) Fischer template theory
(C) Michaelis-Menten theory (D) None of the above
30. Which of the following statement is not true about coenzymes
(A) They are heat labile
(B) They are heat stable
(C) They are low molecular weight substances
(D) Both (B) and (C)
31. The stationary phase in paper chromatography is
(A) Paper (B) Water adsorbed by the paper
(C) Solvent adsorbed by the paper (D) None of the above
32. The time in minutes required to reduce the spore concentration by specific number of log cycles is called
(A) D-value (B) Z-value (C) F-value (D) S-value
33. Golden revolution is related to
(A) Prawn production (B) Oil seed production
(C) Egg production (D) Fruit production
34. Which of the following analytical methods can be used to distinguish flavour compounds?
(A) Hydrometry (B) Near Infrared Spectroscopy
(C) Polarimetry (D) Gas Chromatography
35. The first Krishi Vigyan Kendra (KVK) was established at
(A) Bangalore (B) Pondicherry (C) Hyderabad (D) Mysore
36. World's first high yielding variety of Basmati rice variety is
(A) KRH-1 (B) JKH-7
(C) PUSA Basmathi (D) Basmathi-370

37. Which theory states "gelation of pectin is a type of coagulation in which the conjugated particles forms a continuous network and hold the solution
- (A) Hinton's theory (B) Olsen's theory
(C) Spencers theory (D) Fibrill theory
38. Edible part of mango is
- (A) Endosperm (B) Meso carp
(C) Thalamus (D) None of the above
39. Boiling point of milk
- (A) 100.17°C (B) 101.17°C (C) 99.17°C (D) 98.17°C
40. Which among the following is India's first indigenously developed missile?
- (A) Pritvi (B) Akash (C) Agni (D) Trishul
41. Norman E Borlaung ,the only agricultural scientist who got Nobel prize under which category
- (A) Peace (B) Physics (C) Chemistry (D) Economics
42. Cow's milk appears yellow because it contains
- (A) Fat (B) Lipase (C) Protein (D) Riboflavin
43. 'Karnal Bunt is associated with
- (A) Wheat (B) Maize (C) Rice (D) Sugar cane
44. Which enzyme is used in dairy application?
- (A) Acid proteinase (B) Lipase
(C) Lysozyme (D) All of the above
45. The enzyme used for tenderization of meat is
- (A) Protease (B) Ficin
(C) Bromeline (D) All of the above
46. Which one is used as flavour enhancer?
- (A) Chloropropanol (B) Dichloropropanol
(C) Monosodium glutamate (D) All of the above

47. As per FPO order, the Jam should contain
(A) Fruit pulp-40% Brix 68° (B) Fruit pulp-35% Brix 68°
(C) Fruit pulp-45% Brix 68° (D) Fruit pulp-55% Brix 68°
48. The Khariff season is
(A) March to May (B) November to February
(C) June to October (D) February to June
49. The detergent used in cell disruption is
(A) SDS (B) Triton X-100
(C) Both (A) and (B) (D) None of the above
50. Sulphur resistant cans are coated with
(A) C-enamel (B) R-enamel
(C) S-enamel (D) All of the above
51. The volatile component in clove is
(A) Carvacrol (B) Eugenol (C) Cineole (D) Linalool
52. The stimulating effect in coco is brought by
(A) Pentosans (B) Theobromine
(C) Catechins (D) Epigallocatechin
53. The prominent enzyme in honey is
(A) α glucosidase (B) β glucosidase
(C) galactase (D) glucose reductase
54. The hemiacetal form of sugar reacts with an alcohol to form
(A) Acetal (B) Hemiacetal
(C) Glycosides (D) Carrageenans
55. The primary ester bonds of triacylglycerol is hydrolyzed by
(A) Pancreatic lipase (B) Pancreatic hydrolase
(C) Pancreatic oxidase (D) Pancreatic triacylase
56. The foaming property of egg protein is due to
(A) Hydrophobic bonding (B) Film formation
(C) Adsorption (D) Hydrogen bonding

57. Emulsions stability is expressed as
(A) $(\text{Volume of cream level}/\text{total volume of emulsion}) \times 100$
(B) $(\text{Volume of emulsion}/\text{volume of cream level}) \times 100$
(C) $(100 \times \text{volume of cream level})/\text{volume of emulsion}$
(D) $(100 \times \text{volume of emulsion})/\text{volume of cream level}$
58. The enzymes glycosidases and polyphenol oxidases are known as
(A) Anthoxanthinases (B) Anthocyanases
(C) Glucophenolases (D) Glucooxidases
59. The volatile compound responsible for flavor in orange is
(A) Ethanal (B) Neral (C) Geranial (D) Neryl acetate
60. The volatile component in coriander is
(A) Linalool (B) Cineole (C) Eugenol (D) Carvacrol
61. Aroma of the tomatos due to
(A) (Z)-3-hexenal (B) (E)-2- nonenal
(C) Linolenic acid (D) 3,6, nonadienal
62. The smallest spatial unit of repetition along the chain axis within the unit cell is termed as
(A) Subcell (B) Transition point
(C) Short spacing (D) Long spacing
63. Formation of oxymyoglobin, when molecular oxygen binds to myoglobin is termed as
(A) Oxidation (B) Oxygenation
(C) Dehydration (D) Dehydrogenation
64. The viscosity property of when protein is due to
(A) Hydrophobic bonding (B) Water binding
(C) Adsorption (D) Film formation
65. When chocolate are stored at 75-80% humidity _____ is seen
(A) Fat bloom (B) Sugar bloom
(C) Dew stage (D) Yellow surface

66. Carbonyl groups of aldehyde which undergo nucleophilic attachment by oxygen atom or hydroxyl group produce
- (A) Acetal (B) Hemiacetal
(C) Glycosides (D) Carrageenans
67. Carotenoid is a
- (A) Simple lipid (B) Compound lipid
(C) Derived lipid (D) None of the above
68. The structural group of carotenoids is
- (A) Oxygenated xanthophylls (B) Xanthophylls
(C) α xanthophylls (D) β xanthophylls
69. The volatile compound responsible for flavor in lemon is
- (A) Ethanol (B) Octanal (C) Neral (D) Citral
70. The volume of oil that can be emulsified per gram of protein before phase inversion occurs is known as
- (A) Emulsion stability (B) Emulsion capacity
(C) Emulsion activity index (D) Emulsion load
71. The water soluble, non starch food polysaccharide derived from cellulose is
- (A) Carboxymethyl cellulose (B) Gar gum
(C) Locust gum (D) Xanthum gum
72. The alcoholic beverage made from alcohol and grain distillate by special process is known as
- (A) Absinthe (B) Bitters (C) Aquavit (D) Vodka
73. The volatile component in cardamom is
- (A) Cineole (B) Camphor (C) Carvacrol (D) Camphene
74. Name the enzyme which brings about the fermentation of tea leaves in tea processing
- (A) Proteinase (B) Phenylalanine ammonia-lyase
(C) Dehydroshikimate reductase (D) Polyphenol oxidase

75. The water soluble, non starch food polysaccharide derived from red algae is
(A) Acetal (B) Hemiacetal
(C) Glycosides (D) Carrageenans
76. The process of transfer of an amino group from an amino acid to an original keto acid is known as
(A) Transamidation (B) Transamidination
(C) Transamination (D) Transdeamination
77. Glutamic acid being a constituent of folic acid is termed as
(A) Pteroyl glutamate (B) Guanidoacetate
(C) Glutathione (D) Glutaniyl folate
78. Protein metabolism is influenced by
(A) Androgens (B) Epinephrine
(C) Thyroxine (D) Insulin
79. Adrenal insufficiency causes
(A) Hypokalemia (B) Hyponatremia
(C) Hyperkalemia (D) Hypernatremia
80. The hormone which is a single polypeptide chain composed of 190 amino acids is
(A) Thyroid stimulating hormone (B) Follice stimulating hormone
(C) Growth hormone (D) Lactogenic hormone
81. The hormone that accelerated the catabolism of protein is
(A) Growth hormone (B) Insulin
(C) Adrenocorticotropic (D) Testosterone
82. Lipositol is derived from
(A) Lecithin (B) Cephalin
(C) Diglyceride (D) Phosphatidic acid
83. Which hormone increased the blood glucose levels by increasing glycogenolysis and glycolysis?
(A) Epinephrine (B) Adrenocorticotrophic
(C) Thyroid stimulating hormone (D) Glucagon

84. Completion oxidation of one molecule of glucose yields
(A) 57000 calories of energy (B) 600,000 calories of energy
(C) 625,000 calories of energy (D) 686,000 calories of energy
85. In the conversion of glucose-1-phosphate to uridine diphosphate glucose _____ is liberated
(A) Pyrophosphate (B) Inorganic phosphorus
(C) Organic phosphorus (D) None of the above
86. In the Embden Meyerhof pathway, conversion of 3-phosphoglycerate to 2-phosphoglycerate is catalyzed by the enzyme
(A) Phosphofructokinase (B) Phosphoglyceromutase
(C) Phosphoglyceratekinase (D) Enolase
87. In the Embden Meyerhof pathway, conversion of glucose-6-phosphate to fructose-6-phosphate is catalysed by the enzyme
(A) Phosphofructokinase (B) Phosphoglyceromutase
(C) Phosphoglyceratekinase (D) Enolase
88. Partial hydrolysis of collagen by steam gives
(A) Gelatin (B) Protamines
(C) Phosphoprotein (D) Casein
89. The test that is used to detect oxidative rancidity is
(A) Frieds test (B) Kries test
(C) Methyls test (D) Gallic acid test
90. Example of phospholipid is
(A) Choline (B) Sphingomyelin
(C) Ethanolamine (D) Glycerides
91. Example of a polysaccharide is
(A) Verbascose (B) Glucoheptose
(C) Dihydroxyacetone (D) Inulin

92. The mechanism by which one or more products are released from the enzymes before all the substrate are added are known as
(A) Sequential reaction (B) Ping pong reaction
(C) Random order reaction (D) Compulsory order reaction
93. Example of a sulfur containing amino acid is
(A) Cysteine (B) Glutamine (C) Arginine (D) Histidine
94. Transfer of amide group as a source of amino group or amino acid is known as
(A) Transamidation (B) Transamidination
(C) Transamination (D) Transdeamination
95. The metabolism of sodium is influenced by
(A) Adrenocortical hormone (B) Growth hormone
(C) Thyroid hormone (D) Follicle stimulating hormone
96. The hormone which is a glycoprotein and has high cystine content is
(A) Thyroid stimulating hormone (B) Follicle stimulating hormone
(C) Growth hormone (D) Lactogenic hormone
97. In the activation of fatty acid with ATP and CoA to form acyl thioester of CoA in beta oxidation of fatty acid _____ is released
(A) Acetyl coA (B) Adenylic acid
(C) Enol-CoA (D) Hydroxyl CoA
98. The formation of glucose from non- carbohydrate source is known as
(A) Glycogenesis (B) Gluconeogenesis
(C) Glycogenolysis (D) Glycolysis
99. The protein that contain prophyrin as the prosthetic group is termed as
(A) Mettaloprotein (B) Lipoprotein (C) Chromoprotein (D) Mucoprotein
100. The test in which sugar solution is boiled with copper acetate and acetic acid is
(A) Nylanders test (B) Osazone formation
(C) Barfoeds test (D) Glucazone formation