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) *Epidermophyton floccosum*     (B) *Microsporum audocinii*
   (C) *Trichophyton rubrum*          (D) *Microsporum gyypseum*

3. Motile sporangiospores are
   (A) Aplanospores                   (B) Conidospores
   (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) Acholeplasmas                   (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 kansas*         (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) Yerisinia pestis
   (C) Yerisinia enterocolitica  (D) Escherichia coil

11. Urinary tract infections in human may be caused by
   (A) Yerisinia enterocolitica  (B) Proteus mirebilis
   (C) Escherichia coil  (D) Enterobacteriaceas

12. Which is a pathogen of marine fish and eels?
   (A) Vibro fisheri  (B) Vibro cholerae
   (C) Vibro parahaemolyticus  (D) Vibrio anguillarum

13. A leading cause of meningitis in children is
   (A) Pasteurella multocida  (B) Haemophilus influenzae
   (C) Actinobacillus ligineresii  (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 toxification  (D) Microbial food poisoning

16. Aflatoxin is produced by
   (A) Aspergillus flavus  (B) Asperigullus parasticus
   (C) Both (A) and (B)  (D) Chylamidomonas

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) Scleerotinia    (D) Asperigillus niger

21. Black spot in meat is caused by
   (A) Cladosporium herabarum  (B) Mucor mucedo
   (C) Muccor racemosus      (D) Thiamnidusm chacladiodies

22. Green patches are caused in meat by
   (A) Thamnidium    (B) Penicillium
   (C) Mucor        (D) Mold

23. Fish that seem to decompose faster than normal fish is known as
   (A) Canned fish    (B) Feeby 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 florescens  (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) $\alpha$ glucosidase (B) $\beta$ 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 sis due to
   (A) Hydrophobic bonding (B) Film formation
   (C) Adsorption         (D) Hydrogen bonding
57. Emulsions stability is expressed as
   (A) (Volume of cream level/total volume of emulsion) × 100
   (B) (Volume of emulsion/volume of cream level) × 100
   (C) (100 × volume of cream level)/volume of emulsion
   (D) (100 × volume of emulsion)/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 tomatoes 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) Transtition 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) Follicle 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-phosphoerycylate 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) Sphingomylein
   (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) Adenyl 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) Gluczaone formation