

ENTRANCE EXAMINATION FOR ADMISSION, MAY 2011.

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.

9. In yeast the content of RNA is _____ than to DNA
 (A) More
 (B) Less
 (C) Equal
 (D) May be lesser more depending on species
10. The color of spores in Dorners method is
 (A) Black (B) Green (C) Red (D) Pink
11. Generation time of E.coli is (Min) in broth and at 37°C is
 (A) 10 (B) 20 (C) 30 (D) 40
12. The difference between a chemostat and a turbidostat is /are
 (A) The dilution rate in a turbidostat varies and in chemostat it is constant
 (B) Unlike chemostat, turbidostat does not have any limiting nutrient
 (C) Turbidostat operates best at high dilution rates; the chemostat is most stable and effective at lower dilution rates
 (D) All of the above
13. Coconut extract agar detects
 (A) Aflatoxin (B) Ochratoxin (C) Pencillin (D) Calcitonin
14. Dun spoilage is seen in
 (A) Meat (B) Fish
 (C) Egg (D) All of the above
15. What is Ale?
 (A) Fermented Corn (B) Type of beer
 (C) Fermented carrot (D) None of the above
16. Sarcina sickness is the defect of
 (A) Wine (B) Sauerkraut (C) Beer (D) Bread
17. Sonti is
 (A) Barley beer (B) Ginger beer (C) Wheat Beer (D) Rice beer

18. Mead is manufactured from
 (A) Sugar cane (B) Apple (C) Honey (D) Apricot
19. Stable color of wine is believed to result from
 (A) Annatto (B) Self association of anthocyanin
 (C) Dissociation of carotenoids (D) Mesosome
20. When a ball mill is centrifuging
 (A) Maximum grinding takes place (B) Normal grinding takes place
 (C) Little or no grinding takes place (D) None
21. The slurry no. 1 of solid A and liquid B. The slurry No. 2 consist of solid A and liquid C. The viscosity of B is greater than that of C. All the other conditions are being same in both cases. State in which case, time of filtration will be more
 (A) Slurry No. 1 (B) Slurry No. 2
 (C) Both slurries (D) Cannot predict
22. Automated filter is
 (A) Leaf Filter (B) Stationary drum filter
 (C) Rotary drum filter (D) Plate and frame filter
23. The viscosity of _____ increases with temperature
 (A) Hydrogen (B) Water (C) Milk (D) Syrup
24. Tomato ketchup is a good example of
 (A) Newtonian Fluid (B) Non Newtonian fluid
 (C) Pseudoplastic (D) Both (B) and (C)
25. Ratio of inertial force to viscous force is called
 (A) Reynolds number (B) Nusslet number
 (C) Prandl number (D) Newtons number
26. The flow with unchanging velocity distribution is called
 (A) Potential flow (B) Steady flow
 (C) Unsteady flow (D) Fully developed flow
27. Rotating discs make use of _____ energy for atomization
 (A) Gravitational (B) Centrifugal (C) Potential (D) Heat

28. Which of the following is used to measure local or point velocity?
(A) Rotameter (B) Orifice meter (C) Pitot meter (D) Venturimeter
29. An azeotrope is a
(A) Type of isotope of uranium used for irradiation of meat
(B) Liquid mixture with vapor of same composition is that of liquid
(C) Type of heat exchanger where coolant used is liquefied gas
(D) Chemical compound used for the cleaning in place (CIP)
30. The centrifugal pump depends upon _____ of a fluid to develop pressure
(A) Viscosity (B) Energy (C) Inertia (D) Density
31. A vacuum is
(A) Any system pressure at zero atmospheric pressure
(B) Any system pressure at one atmospheric pressure
(C) Any system pressure at below that of atmospheric pressure
(D) Any system pressure at above atmospheric pressure
32. Thermal conductance is reciprocal of
(A) Temperature difference
(B) Cross sectional area of the conductor
(C) Thermal conductivity
(D) Thermal resistance
33. Environmental factors such as temperature and pH exert their effect on the _____ of microbial cells
(A) Membrane (B) DNA (C) Enzymes (D) Cell wall
34. An enzyme _____ the activation energy required for chemical reaction
(A) Increases (B) Provides (C) Lowers (D) Catalyzes
35. Algin is
(A) A polysaccharide (B) A lipid
(C) A protein (D) A provitamin
36. Many coenzymes are
(A) Metals (B) Vitamins (C) Proteins (D) Substrates

37. To digest cellulose in its environment, a fungus produces a/an
 (A) Endoenzymes (B) Exoenzymes (C) Catalase (D) Polymerase
38. Furfural condense with phenol like orcinol
 (A) To rehydrate to form respective sugars
 (B) To give characteristic colored product
 (C) To form a volatile aromatic product
 (D) None of the above
39. Due to the presence of one or more asymmetric carbon atom, stereoisomerism is found in carbohydrates except
 (A) Dihydroxy acetone (B) Glyceraldehyde
 (C) Talose (D) Mannose
40. Two sugars differing only in configuration around one specific carbon atom are called
 (A) Anomer (B) Epimer (C) Isomers (D) Conformers
41. Which of the following pair of carbohydrates are anomers of each other?
 (A) α - Glucose and α - Glucose (B) α - Glucose and β - fructose
 (C) α - Glucose and α - Mannose (D) All of the above
42. Which of the following pairs are epimers of each other?
 (A) D-Glucose and D-mannose (B) D-Glucose and D-galactose
 (C) D-Ribose and D-Arabinose (D) All of the above
43. The change in optical activity of racemic mixture is called
 (A) Reversion (B) Mutarotation
 (C) Inversion (D) Isomerisation
44. Which of the following statement is correct?
 (A) The equatorial hydroxyl group of pyranoses are easily esterified than axial
 (B) The boat form of pyranose ring, which is relatively rigid and more stable than axial
 (C) Monosaccharides are sensitive to hot dilute mineral acids
 (D) All of the above

45. Concentrated acid causes
- (A) Dehydration of sugars
 - (B) Formation of furfurals
 - (C) Formation of aldehyde derivative of furan
 - (D) All of the above
46. Monosaccharide in slightly acidic solution at react with excess phenylhydrazine to form
- (A) Sugar alcohol
 - (B) Glycoside
 - (C) Glycosylamine
 - (D) Osazone
47. What is phytic acid?
- (A) Hexaphosphoric acid of inositol
 - (B) Potassium salt of hexaphosphoric acid
 - (C) Phosphorous associated with mannitol
 - (D) Phosphoricacid of Sorbitol
48. Sugar capable of reducing ————— are called reducing agents
- (A) Cu^{2+}
 - (B) Ag^+
 - (C) Ferricyanide
 - (D) All of the above
49. Which of the following is a sachharifying enzyme?
- (A) α - Amylase
 - (B) β - Amylase
 - (C) Both
 - (D) None of the above
50. Palatinose is isomer of sucrose and differ from it having
- (A) β - 1,2-glycosidic bond
 - (B) α - 1,4-glycosidic bond
 - (C) A-1, 6-glycosidic bond
 - (D) β - 1,6-glycosidic bond
51. Hemicelluloses are
- (A) Isomers of cellulose
 - (B) Derivatives of cellulose
 - (C) Polymer of cellulose
 - (D) Polymer of Talose
52. When valine is heated with glucose at 180°C the flavor produced is/are
- (A) Chocolate
 - (B) Bread like
 - (C) Caramel
 - (D) All of the above

53. Modification of starch may affect
- (A) Gelatinization and heating time
 - (B) Freezing stability and cold water stability
 - (C) Viscosity
 - (D) All of the above
54. Number of carbon atom in stearic acid is
- (A) 12
 - (B) 16
 - (C) 18
 - (D) 30
55. Which lipid is saponifiable?
- (A) Simple
 - (B) Complex
 - (C) Both (A) and (B)
 - (D) None
56. Veal is obtained from
- (A) Sheep
 - (B) Buffalo
 - (C) Goat
 - (D) Calf
57. Frankfurters sausages are
- (A) Cured, cooked and smoked
 - (B) Cured, uncooked and smoked
 - (C) Fresh, cooked and smoked
 - (D) Cured, cooked and unsmoked
58. Fats of fish are prone to oxidation because of
- (A) More saturation
 - (B) Less saturation
 - (C) Higher amount of lipoxidase enzyme
 - (D) None of the above
59. Glazing of fish is done to protect fish from
- (A) Microbial spoilage
 - (B) Freezer burn
 - (C) Oxidation and freezer burn
 - (D) Chemical spoilage
60. Which of the following statement is correct?
- (A) Rigor mortis is hastened by struggling of fish, lack of oxygen, high pH and warm temperature
 - (B) Rigor mortis is hastened by struggling of fish, lack of oxygen, low pH and warm temperature
 - (C) Rigor mortis is hastened by struggling of fish, lack of oxygen, high pH and low temperature
 - (D) Rigor mortis is not affected by oxygen pH and temperature

61. Match the following dimensionless number with field of use.
- | | | |
|--------------------|----|----------------------------|
| A. Grash of Number | 1. | Compressive flow |
| B. Froude number | 2. | Free convection |
| C. Euler number | 3. | Free surface flow |
| D. Mach number | 4. | Pressure variation in flow |
- A B C D
- (A) 2 1 4 3
 (B) 4 3 2 1
 (C) 2 3 4 2
 (D) 4 1 2 3
62. Number of carbon atom in stearic acid is
- (A) 12 (B) 16 (C) 18 (D) 30
63. Sharp smell of onion is due to
- (A) Ammonia (B) Sulphur
 (C) Chlorine (D) Combined effect of the above
64. Lard is obtained from
- (A) Sheep (B) Buffalo (C) Goat (D) Hogs
65. White deposition on the surface of the chocolate is due to faulty
- (A) Winterization (B) Plasticization
 (C) Tempering (D) None of the above
66. Which of the following oil do you expect to have more free fatty acids?
- (A) Sunflower oil (B) Rice bran oil
 (C) Mustard oil (D) All of the above
67. Polystyrene is used for
- (A) Acid foods (B) Neutral foods
 (C) Basic foods (D) All of the above

68. Which of the following statement is correct?
- (A) Nylon can be steam sterilized at 140°C
 - (B) Vinyl chloride monomer in PVC is carcinogenic
 - (C) Diastatic activity is the combined activity of alpha and beta amylase
 - (D) All of the above
69. Instant coffee is packed in flexible laminates of
- (A) LDPE/Al foil/PET
 - (B) PET/Al foil/LDPE
 - (C) Metallized PET/LDPE
 - (D) Both (B) and (C)
70. In recent years, biscuits, cookies and crackers are packed in
- (A) RCF coated with LDPE/PVE
 - (B) RCF coated with HDPE/PVC
 - (C) OPP either plane or coextruded
 - (D) RCF coated with acrylic
71. Cherry coffee is obtained by
- (A) Wet processing
 - (B) Vacuum processing
 - (C) Dry processing
 - (D) Chemical treatment
72. Roasting temperature of coffee varies from
- (A) 100-110°C
 - (B) 200-250° C
 - (C) 350-475° C
 - (D) 120-140° C
73. Chicory is obtained from
- (A) Leaf
 - (B) Stem
 - (C) Flower
 - (D) Root
74. High quality tea with good color, strength, briskness can be used as the indicator of quality
- (A) High
 - (B) Low
 - (C) Unity
 - (D) Any of the above
75. Tisanes are
- (A) Herbal tea
 - (B) Type of beverage made from semi-fermented tea leaves
 - (C) Method of incorporation of flavor to tea
 - (D) None of the above

76. Which of the following containers should not be used in microwave oven
(A) Glass (B) China ware (C) Silver (D) Plastic
77. ISO standards are
(A) Mandatory orders (B) Mandatory regulations
(C) Non mandatory regulations (D) Non mandatory orders
78. Which of the following is a self carbonated beverage?
(A) Kumiss (B) Kefir
(C) Voghurt (D) Bulgarian buttermilk
79. Operation flood-1 was launched in
(A) 1969 (B) 1970 (C) 1972 (D) 1971
80. A churn used for manufacturing of butter contains 950 Kg of cream. While manufacturing 2% of fat is lost. Calculate the amount of butter formed and the % of overrun in butter
(A) 22.52 Kg (B) 22.50 Kg (C) 22.55 Kg (D) 22.53 Kg
81. Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively and they cross each other in 23 seconds. The ratio of their speeds is
(A) 1 : 3 (B) 3 : 2
(C) 3 : 4 (D) None of the above
82. A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 km/hr, what is the length of the platform?
(A) 120 m (B) 240 m
(C) 300 m (D) None of the above

83. X and Y can do a piece of work in 20 days and 12 days respectively. X started the work alone and then after 4 days Y joined him till the completion of the work. How long did the work last?
- (A) 6 days (B) 10 days (C) 15 days (D) 20 days
84. In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?
- (A) 30% (B) 70% (C) 100% (D) 250%
85. A trader mixes 26 kg of rice at Rs. 20 per kg with 30 kg of rice of other variety at Rs. 36 per kg and sells the mixture at Rs. 30 per kg. His profit percent is
- (A) No profit no loss (B) 5%
(C) 8% (D) 10%
86. A grocer has a sale of Rs. 6,435 Rs. 6,927, Rs. 6,855, Rs. 7,230 and Rs. 6,562 for 5 consecutive months. How much sale must he have in the sixth month so that he gets an average sale of Rs. 6,500?
- (A) 4991 (B) 5991 (C) 6001 (D) 6991
87. The average weight of 8 person's increases by 2.5 kg when a new person comes in place of one of them weighing 65 kg. What might be the weight of the new person'
- (A) 76 kg (B) 76.5 kg
(C) 85 kg (D) data inadequate
88. Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?
- (A) 210 (B) 1050 (C) 25200 (D) 21400
89. How many 3-digit numbers can be formed from the digits 2,3,5,6,7 and 9, which are divisible by 5 and none of the digits is repeated?
- (A) 5 (B) 10 (C) 15 (D) 20

90. The H.C.F. of two numbers is 23 and the other two factors of their L.C.M. are 13 and 14. The larger of the two numbers is
(A) 276 (B) 299 (C) 322 (D) 345
91. The greatest number of four digits which is divisible by 15, 25, 40 and 75 is
(A) 9000 (B) 9400 (C) 9600 (D) 9800
92. 39 persons can repair a road in 12 days, working 8 hours a day. In how many days will 30 persons, working 6 hours a day, complete the work?
(A) 10 (B) 13 (C) 14 (D) 15
93. A can contains a mixture of two liquids A and B in the ratio 7 : 5. When 9 litres of mixture are drawn off and the can is filled with B, the ratio of A and B becomes 7 : 9. How many litres of liquid A was contained by the can initially?
(A) 10 (B) 20 (C) 21 (D) 25
94. The banker's gain of a certain sum due 2 years hence at 10% per annum is Rs. 24. The present worth is
(A) Rs. 480 (B) Rs. 520 (C) Rs. 600 (D) Rs. 960
95. A train can travel 50% faster than a car. Both start from point A at the same time and reach point B 75 kms away from A at the same time. On the way, however, the train lost about 12.5 minutes while stopping at the stations. The speed of the car is
(A) 100 kmph (B) 110 kmph (C) 120 kmph (D) 130 kmph
96. Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14% p.a. and 11% p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3,508, what was the amount invested in Scheme B?
(A) Rs. 6,400 (B) Rs. 6,500 (C) Rs. 7,200 (D) Rs. 7,500

97. A, B, C subscribe Rs. 50,000 for a business. A subscribes Rs. 4000 more than B and B Rs. 5000 more than C. Out of a total profit of Rs. 35,000, A receives
- (A) Rs. 8,400 (B) Rs. 11,900
(C) Rs. 13,600 (D) Rs. 14,700
98. Three partners shared the profit in a business in the ratio 5:7:8. They had partnered for 14 months, 8 months and 7 months respectively. What was the ratio of their investments?
- (A) 5 : 7 : 8 (B) 20 : 49 : 64
(C) 38 : 28 : 21 (D) None of the above
99. What was the day of the week on 28th May, 2006?
- (A) Thursday (B) Friday
(C) Saturday (D) Sunday
100. A rectangular park 60 m long and 40 m wide has two concrete crossroads running in the middle of the park and rest of the park has been used as a lawn. If the area of the lawn is 2109 sq. m, then what is the width of the road?
- (A) 2.91 m (B) 3 m
(C) 5.82 m (D) None of the above
-