Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **16FP1001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BASICS OF FOOD SCIENCE AND TECHNOLOGY** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | | | | **Course outcome** | **Marks** |
| **PART-A (40X1=40 MULTIPLE CHOICE QUESTIONS)** | | | | | | |
| 1. | Which of the following is a pentose sugar? | | | |  |  |
|  | a. Ribose | b. Glucose | c. Fructose | d.Galactose | C01 | (1) |
| 2. | Sucrose is commonly called as \_\_\_\_\_\_\_\_\_\_\_ | | | | C01 | (1) |
|  | a. Malt sugar | b. Cane sugar | c. Dextrin | d. Milk sugar |
| 3. | Rich source of vitamin B1 (thiamin) is | | | |  |  |
|  | a. Grape | b. Banana | c. Cashew nut | d. Guava | C01 | (1) |
| 4. | Glycolipids are the compounds of fatty acids with \_\_\_\_\_\_\_\_\_\_\_\_ | | | |  |  |
|  | a. protein | b. carbohydrates | c. triglycerides | d. carboxylic acids | C01 | (1) |
| 5. | Coconut oil is rich in the following fatty acid | | | |  |  |
|  | a.Butyric acid | b.Lauric acid | c.Myristic acid | d.Palmitic acid | C01 | (1) |
| 6. | \_\_\_\_\_\_\_\_\_\_\_\_\_ constitute the principal antioxidants in vegetable oils | | | |  |  |
|  | a. BHT | b. propyl gallate | c. ascorbic acid | d.tocopherols | C01 | (1) |
| 7. | Fats containing \_\_\_\_\_\_\_\_\_\_\_\_ are solid at ordinary room temperature | | | |  |  |
|  | a. unsaturated fatty acids | b. cholesterol | c. saturated fatty acids | d. water | C01 | (1) |
| 8. | PEM stands for | | | | C01 |  |
|  | 1. a. pepsin energy malnutrition | 1. b. protein-excess malnutrition | 1. c. protein-energy malnutrition | 1. d. pepsin-enzyme malnutrition |  | (1) |
| 9. | The formula for Body Mass Indexing is | | | | C01 |  |
|  | a.Height divided by weight | b. Weight divided by height | c. Weight divided by height squared | d. Height divided by weight squared |  | (1) |
| 10. | Disease which is caused by protein-energy malnutrition is | | | | C01 |  |
|  | 1. a. tuberculosis | 1. b. marasmus | 1. c. goiter | 1. d. angina |  | (1) |
| 11. | .\_\_\_\_\_\_\_\_\_\_ fungi is useful in the ripening of camembert cheese. | | | | CO2,3 |  |
|  | a.*Penicilliumroqueforti* | b.*Penicilliumcamemberti* | c.*Penicilliumnotatum* | *d. Penicilliumexpansum* |  | (1) |
| 12. | The production of beer is called \_\_\_\_\_\_\_\_\_ | | | | CO2,3 |  |
|  | a. Brewing | b. Malting | c.Saccharification | d.Soaking |  | (1) |
| 13. | \_\_\_\_\_\_\_\_\_\_ is found in egg white that prevents the yolk from microbial attack. | | | | CO1 |  |
|  | a. Pencillinase | b.Pectinase | c.Catalase | d.Lysozyme | (1) |
| 14. | Yoghurt is prepared by fermentation of using the following two bacteria – | | | | CO2,3 |  |
|  | a. *L. bulgaricus& L. mesenteroides* | b.*L. bulgaricus& L. theromophilus* | c*. L. thermophilus& S. lactis* | d.*L. thermophilus& L. mesenteroides* | (1) |
| 15. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the causative agent for Amoebiasis. | | | | CO2 |  |
|  | a. *Clostridium botulinum* | b.Hepatitis A | c. *Shigelladysentriae* | d.*Entamoebahistolytica* |  | (1) |
| 16. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is used as a faecal indicator organism | | | | CO2 |  |
|  | a. *E.coli* | b.*Salmonellatyphi* | c. *Vibrio cholerae* | d.*Corynebacterium* | (1) |
| 17. | Special nutrients required for the growth of beneficial bacteria in gut \_\_\_\_\_\_\_\_\_ | | | | CO1 |  |
|  | a.Probiotics | b.Prebiotics | c. Antibiotics | d.fungicide |  | (1) |
| 18. | Chaptalisation refers to | | | | CO3 |  |
|  | a.Addition of inoculum to grape must | b. Addition of extra juice to wine | c.Addition of sugar to wine | d. Addition of sulphur dioxide to wine | (1) |
| 19. | Which of the following is not a source of prebiotics? | | | | CO1 |  |
|  | a Carrots. | b. Chicory roots | c.Jaggery | d. Onion | (1) |
| 20. | \_\_\_\_\_\_\_\_\_\_dinoflagellate is responsible for paralytic shellfish poisoning | | | | CO2 |  |
|  | a.*Gonyaulaxtamarensis* | b.Gracilaria | c. Euglena | d. Chlorella | (1) |

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| 21. | Which among the following is an essential amino acid? | | | | | | CO1 | (1) |
|  | a. Cysteine | b. Leucine | | c. Tyrosine | | d. Aspartic acid |
| 22. | Egg is rich in all of the following except | | | | | | CO1 | (1) |
|  | a. Cholesterol | b. Vitamin C | | c. Saturated fatty acid | | d. Calcium |
| 23. | Which of the following is an imino acid | | | | | | CO1 | (1) |
|  | a. Alanine | b. Glycine | | c. Lysine | | d.Proline |
| 24. | Which of the following is a rich source of pectin | | | | | | CO1 | (1) |
|  | a. Apple | b. Barley | | c. Rice | | d. Wheat |
| 25. | Which of the following can be avoided as a source of carbohydrate? | | | | | | CO1 | (1) |
|  | a.2 pieces of Whole wheat *chappati*. | b.100 g of Cooked Parboiled rice | | c.2 pieces of *Jowar* roti | | d.4 pieces of Rusk |
| 26. | Which of the following is better to be avoided (Say 100 g) ? | | | | | | CO1 | (1) |
|  | a. Grapes | b. Oranges | | c. Apples | | d. RTS beverage |
| 27. | A pretreatment of fruits and vegetables by mild heat for a specific time followed by rapid cooling or passing immediately to the next processing stage is | | | | | | CO3 | (1) |
|  | a. Blanching | b.Pastuerisation | | c.Sterilisation | | d. Drying |
| 28. | The time- temperature combination for LTLT pasteurisation of milk is | | | | | | CO3 | (1) |
|  | a. 63 °C / 15 min | b. 63 °C / 30 min | | c. 71 °C / 15sec | | d71 °C / 30sec |
| 29. | Which of the following chemical is added for firming tissues during blanching | | | | | | CO3 | (1) |
|  | a. KCl | b.NaCl | | c. CaCl2 | | d. MgCl2 |
| 30. | Which of the following is **not** characteristic of blanching? | | | | | |  |  |
|  | a. Enzyme inactivation | b. Microbial Inactivation | | c. Tissue softening | | d. Dirt removal | CO3 | (1) |
| 31. | The time-temperature combination for mango juice pasteurization is | | | | | |  |  |
|  | a. 71 °C / 15sec | b.63 °C / 15 min | | c.77°C / 15 sec. | | d.77 °C / 1 min | CO3 | (1) |
| 32. | Enzyme which is used to detect completion of pasteurization of milk is | | | | | |  |  |
|  | a. amylase | b. protease | | c. alkaline phosphatase | | d. acid phosphatase | CO3 | (1) |
| 33. | The process in which a multi-layered pouch is used for sterile packaging of Ready-to-Eat meals is | | | | | | CO3 |  |
|  | a.aseptic processing. | b.retort pouch processing | | c.Appretizing | | d. Canning |  | (1) |
| 34. | Process of sealing foodstuffs hermetically in metal containers and sterilizing them by heat for long storage is known as | | | | | | CO3 |  |
|  | a.Blanching | b. Canning | | c.Pasteurisation | | d. Grading |  | (1) |
| 35. | The process by which a sterile product is packaged in a sterile container in a way that maintains sterility - | | | | | | CO3 |  |
|  | a. Aseptic Processing | b. Canning | c. Exhausting | | d. Retort Pouch Processing | |  | (1) |
| 36. | Which of the following driers cannot be used for drying fruit pieces | | | | | |  |  |
|  | a.Cabinet drier | b. Drum Drier | | c. Freeze drier | | d. Vacuum drier | CO3 | (1) |
| 37. | Which of the following cannot be dried in a spray drier? | | | | | |  |  |
|  | a. Milk | b. Fruit juice | | c. Fish | | d. CuSO4 solution | CO3 | (1) |
| 38. | The drying method that involves a fruit product suspended in a hypertonic solution for water removal due to concentration gradient | | | | | |  |  |
|  | a. Sun drying | b. Solar drying | | c. Osmotic drying | | d. Microwave drying | CO3 | (1) |
| 39. | Which of the following **cannot** be achieved by an iiradiation of 0.9 kGy | | | | | |  |  |
|  | a. Sprout inhibition | b. Ripening delay | | c. Insect disinfestation | | d. Pathogen elimination | CO3 | (1) |
| 40. | Which of the following is a thermal method of processing | | | | | |  |  |
|  | a. Pulsed electric | b. Pulsed light | | c.Infra red | | d. High pressure | CO3 | (1) |
| **PART B(8 X 5 = 40 MARKS) (ANSWER ANY EIGHT)** | | | | | | | | | |
| 41. | Give examples for the following: (5 x 1)   1. Non –reducing disaccharide 2. Saturated fatty acid 3. Amino acid containing side chain –COOH group 4. Anti scorbutic factor 5. Anti xerophthalmic factor | | | | | | CO1 | (5) | |
| 42. | What is iodine value? What is its significance? | | | | | | CO1,3 | (5) | |
| 43. | Write short notes on the following – (2x2.5)   1. BMR 2. PER | | | | | | CO1 | (5) | |
| 44. | Write the causative microorganisms responsible for – a. Shigellosis b. Cholera b. Typhoid  d. Hepatitis B e. Q - fever | | | | | | CO2 | (5) | |
| 45. | With the help of a neat diagram, enlist the steps involved in the manufacture of sauerkraut. | | | | | | CO2,3 | (5) | |
| 46. | With the help of a neat diagram, outline the steps involved in the manufacture of wine. | | | | | | CO3 | (5) | |
| 47. | Differentiate between blanching and pasteurization. | | | | | | CO2,3 | (5) | |
| 48. | Write briefly on a. D-value b. Z –value. | | | | | | CO3 | (5) | |
| 49. | Write short notes on minimal processing of food. | | | | | | CO2,3 | (5) | |
| 50. | Write short notes on Pulsed electric field processing of Food. | | | | | | CO3 | (5) | |
| **PART C( 2 X 10 = 20 MARKS) (ANSWER ANY TWO)** | | | | | | | | | |
| 51. | Discuss briefly on the following – a. Enzymatic browning b. Maillard reaction | | | | | | C03 | (10) | |
| 52. | With the help of a neat diagram, discuss in detail the working of any one type of pasteurizer. | | | | | | C02, 3 | (10) | |
| 53. | Discuss briefly on the concept of hurdle technology with a suitable example. | | | | | | CO3 | (10) | |

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