Register No.: ………………………………   Name : ………………………………………………

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SIXTH SEMESTER B.TECH DEGREE EXAMINATION (R), MAY 2023

FOOD TECHNOLOGY

(2020 SCHEME)

Course Code : 20FTT308

Course Name : Comprehensive Course Work

Max. Marks :50   **Duration : 75 Minutes**

PART A
(Answer all questions. Each question carries 1 mark)

1   Aflatoxin is produced by

     A.   *Aspergillus sp.*   B.   *Salmonella sp.*

     C.   *Fusarium sp.*   D.   *Streptococcal sp.*

2   Yeast-cell crops harvested from the vats are used to produce which of the following compounds?

     A.   alcoholic beverages   B.   antibiotics

     C.   enzymes   D.   organic acids

3   Which of the following type of spoilage occurs in fresh meat?

     A.   Souring   B.   Greening

     C.   Putrefaction   D.   Moldy

4   The most spoilage bacteria grow at

     A.   Acidic pH   B.   Alkaline pH

     C.   Neutral pH   D.   All of the above

5   Salmonellosis involves

     A.   An endotoxin and exotoxin   B.   An enterotoxin and cytotoxin

     C.   An exotoxin and cytotoxin   D.   A cytotoxin only

6   Water activity can act as _____.

     A.   An extrinsic factor   B.   An intrinsic factor determining the likelihood of microbial proliferation

     C.   A processing factor   D.   All of the above

7   Which of the following is true about Natural Convection?

     A.   Low heat transfer   B.   Due to gravity and natural buoyant forces

     C.   Dependent on viscosity, density and thermal conductivity   D.   All of the mentioned

8   Heat correction factor is needed in

     A.   Multi pass flow   B.   Counter flow
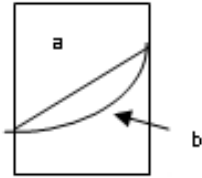
     C.   Parallel flow   D.   Cross flow

9   The existence of a thick constant film between two phases is a proposal by which of the following theories

A.   Film theory   B.   Penetration theory

C.   Surface renewal theory   D.   All of the mentioned

10   The Nusselt number is a function of

A.   Prandtl Number   B.   Grashoff's Number

C.   Prandtl Number & Grashoff's   D.   Mach Number
Number

11   Ratio of equilibrium concentrations of solute A in liquid phase and gas phase i.e. CAL* and CAg* respectively, is α. α is called _____

A.   Diffusion coefficient   B.   Distribution coefficient

C.   Mass transfer coefficient   D.   None of the mentioned

12   Which of the following property of air does not increase with increase in temperature?

A.   Thermal conductivity   B.   Thermal diffusivity

C.   Density   D.   Dynamic viscosity

13   Which of the following is false?

A.   Fats provide insulation   B.   Fats maintain healthy skin and hair

C.   Vitamin A, D, E and K are fat soluble only   D.   Fats provide instant energy

14   Bread staling is caused by

A.   Retrogradation   B.   Gelatinization

C.   Caramelization   D.   Aggregation

15   As per WHO standards, a person with a BMI of 26 kg/m^2 is considered as

A.   Normal   B.   Underweight

C.   Overweight   D.   Obese

16   Which is the storage carbohydrate in humans?

A.   Cellulose   B.   Glycogen

C.   Pectin   D.   Starch

17   Which of the following food components does not provide any nutrients?

A.   Milk   B.   Fruit juice

C.   Vegetable Soup   D.   Water

18   Which of the following is a function of insoluble fiber only?

A.   Regulating blood sugar   B.   Regulating the pH of the body

C.   Adding bulk to stool   D.   Lowering cholesterol

19   Heat transfer during the drying process is governed by

A.   Newton's law of cooling   B.   Fourier's Law

C.   Power Law   D.   Stefan Boltzmann Law

20   When humidity ratio of air ___, air is said to be dehumidified

A.   increases   B.   decreases

C.   remains constant   D.   None of the above

21   Most common enzyme used as an indicator to determine the effectiveness of blanching

A.   Catalase   B.   Peroxidase

C.   lipoxygenase   D.   Zymase

22   Cold sterilization refers to the preservation of food by
      A.   Refrigeration   B.   Freezing
      C.   Dehy dration   D.   Radiation
23   Intermediate Moisture Foods (IMF) have aw in the range of
      A.   0.60-0.10   B.   0.70-0.30
      C.   0.85-0.55   D.   0.75-0.85
24   Mathematical model to estimate the energy required to bring about a specified
      reduction in size is given by
      A. $dE/dx = -K/x^n$ B. $dE/dx = -(K/x)^n$
      C. $dE/dx = -K^n/x$ D.   None of these
25   The international body that is a global reference point in harmonizing food
      standards and its implementation
      A.   International Standards   B.   Codex Alimentarius Commission
            Organization (ISO)   (CAC)
      C.   World Health Organization   D.   Food and Agricultural Organization
            (WHO)   (FAO)
26   What is the wavelength range for UV spectrum of light?
      A.   400 nm – 700 nm   B.   700 nm to 1 mm
      C.   0.01 nm to 10 nm   D.   10 nm to 400 nm
27   In Column chromatography, the stationary phase is made of _____ and the
      mobile phase is made of _____
      A.   Solid, liquid   B.   Liquid, liquid
      C.   Liquid, gas   D.   Solid, gas
28   Kjeldal method of protein estimation follows the
      A.   Distillation, Digestion and B.   Digestion, Distillation and Titration
            Titration
      C.   Titration, Digestion and   D.   None of these
            Distillation
29   Which of the following factors does not influence electrophoretic mobility?
      A.   Molecular weight   B.   Shape of molecule
      C.   Size of molecule   D.   Stereochemistry of molecule
30   What does the electrophoresis apparatus consist of?
      A.   Gel, buffer chamber and fire B.   Buffer chamber and electrophoresis
            pack   unit
      C.   Electrophoresis unit and gel D.   Power pack and electrophoresis
            separator   unit

PART B
(Answer all questions. Each question carries 2 marks)

31   In yeast cells, what is the protein content range?
      A.   69%   B.   12-15%
      C.   20-40%   D.   40-50%
32   The ACC (aerobic colony count) is also known as
      A.   Total viable count (TVC)   B.   Aerobic plate count (APC)
      C.   Standard plate count (SPC) D.   All of the above

33

From the above figure for heat transfer, 'a' refers to _____ and 'b' refers to _____
A. Steady state heat transfer, Unsteady state heat transfer
B. Unsteady state heat transfer, Steady state heat transfer
C. None of the mentioned
D. All of the mentioned

34 The latent heat of vaporization of water is
A. 2.3×10^6 J Kg^{-1}
B. 3.3×10^6 J Kg^{-1}
C. 3.8×10^6 J Kg^{-1}
D. 2×10^6 J Kg^{-1}

35 What is the normality of 1 M solution of H_3PO_4?
A. 0.3 N
B. 2 N
C. 3 N
D. 4 N

36 Reducing sugars help in the food industry in the following way. Which of the given sentences is untrue?
A. They easily dissolve in oil
B. They attach themselves to amino acids and form compounds that affect the color, flavor and other properties of food
C. The reactive group of long-chain sugar polymers can form a cross-link which forms a basis for edible packaging in the food industry
D. None of the mentioned

37 What is the generation time (min) if 10^2 *E coli* cells (CFU/g) growing logarithmically for
6 h produce 1.7×10^6 CFU/g with number of generations as 14?
A. 20.56
B. 22.66
C. 25.71
D. 26.62

38 1000 kg of paddy is harvested at 25% MC, and dried down to 14% MC, what is the final weight of the dried grain?
A. 872 kg
B. 868 kg
C. 900 kg
D. 850 kg

39 In which type of chromatography, the stationary phase held in a narrow tube and the mobile phase is forced through it under pressure?
A. Column chromatography
B. Planar chromatography
C. Liquid chromatography
D. Gas chromatography

40 The Karl Fischer reagent consists of
A. Iodine, pyridine, SO_2 and methanol
B. sodium, pyridine, SO_2 and methanol
C. Iodine, pyridine, CO_2 and methanol.
D. Iodine, pyridine, SO_2 and ethanol.