



10. .... is the process used to inactivate enzymes of fruits and vegetables.  
 a. Pasteurisation  
 b. Sterilisation  
 c. Blanching  
 d. Irradiation
11. .... is the ratio of vapour in a unit mass of water air to the mass of water vapour in the same mass of dry air when it is saturated at the same temperature (dry bulb temperature), it may be defined as the ratio of actual specific humidity to the specific humidity of saturated air at the same dry bulb temperature  
 a. Relative humidity  
 b. Degree of saturation  
 c. Humidity ratio  
 d. Wet bulb temperature
12. .... is the type of heat transfer which does not require any medium for transferring.  
 a. Conduction  
 b. Radiation  
 c. Convection  
 d. None of the above
13. Propionates are the preservatives used in .....  
 a. Beverages  
 b. Baked products  
 c. Meat products  
 d. Soft drinks
14. .... is the time in minutes required for one log cycle reduction in microbial counts at specific temperature.  
 a. Z value  
 b. TDT  
 c. D value  
 d. None of the above
15. .... is defined as equilibrium partial pressure in vapour phase divided by mole fraction of substance in the solution.  
 a. Relative volatility  
 b. Azeotropic mixture  
 c. Volatility  
 d. Ideal solution
16. .... is the process where the entire liquid mixture is suddenly vapourised by passing the feed from high pressure zone to low pressure zone.  
 a. Steam distillation  
 b. Flash distillation  
 c. Fractional distillation  
 d. Vacuum distillation
17. .... is also called as differential distillation.  
 a. Steam distillation  
 b. Flash distillation  
 c. Fractional distillation  
 d. Vacuum distillation
18. Fouling leads to ..... in rate of filtration.  
 a. Increase  
 b. No change  
 c. Decrease  
 d. Both a and c
19. .... is a technique used to control and eliminate pathogen by combining two or more factors.  
 a. HPP  
 b. Hurdle technology  
 c. PEF  
 d. Microwave

20. .... uses a dose between 1-10 kGy for irradiating food.
- a. Radurization
  - b. Radappertization
  - c. Radicidation
  - d. All of the above

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**( PART-B : Descriptive )**

Time : 2 hrs. 40 min.

Marks : 50

*[ Answer question no.1 & any four (4) from the rest ]*

1. What do you mean by membrane? Describe different techniques used to clean membrane 2+8=10
2. Write short note on : 5+5=10
  - a. Conduction, Convection, Radiation
  - b. High pressure processing
3. A cold storage room is constructed of an inner layer of 12.7 mm of pine , a middle layer of 101.6 mm of cork board, an outer layer of 76.2mm of concrete. The wall surface temperature is 255.4 K inside the cold room and 297.1 K at the surface of the concrete. Like conductivities for pine =0.151W/mK; corkboard= 0.0433 W/mK for concrete =0.762 W/mK. Calculate heat loss in W for 1sq.m and the temperature at the interface between the wood and cork board. 10
4. Derive the equation for conduction through hollow cylinder 10
5. Find out all the parameters if following points are given :
  - a. DBT is 30°C and humidity ratio is 0.010 kg water vapour/kg dry air
  - b. RH-50% and DBT-25°C
6. Define following terms : 2×5=10
  - a. Humidity ratio
  - b. Degree of saturation
  - c. Relative humidity
  - d. Dalton's law of partial pressure
  - e. Wet bulb temperature
7. What are pumps? Write down the classification of pumps. Explain working mechanism of centrifugal pump with proper labelled diagram. 1+3+6=10
8. What do you mean by Rheology? Explain the different types of fluids. 1+9=10

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