



# AJEENKYA

## D Y PATIL UNIVERSITY

### End Term Examinations (April 2019)

**School :** School of Engineering

**Program:** B.Tech Biotechnology(Food)

**Course:** Unit Operations in Food Technology

**Course Code:** BTE312

**Semester:** VI

**Total Marks:** 50

**Duration (min) :** 120

**Answer any 5 questions.**

**Each question carries 10 Marks.**

1. Discuss milk spoilage by microorganisms by listing their names and activities.
2. What is Pasteurisation? What are the methods of Pasteurisation? Discuss.
3. What are methods of heat sterilisation of food products? Explain. (10)
4. How is chilling process of food done? What are the effects of chilling on food? Discuss.
5. Define Z value and D value with graphs. Why are these values important in food processing? Give reasons.
6. What are the effects of heat on food? Discuss.
7. Calculate the total mass balance and component mass balance for mixing ingredients to make 25 kg of beef sausages having a fat content of 30%, using fresh beef meat and beef fat. Typically, beef meat contains 18% protein, 12% fat and 68% water and beef fat contains 78% fat, 12% water and 5% protein.
8. Two fluids, milk and rape-seed oil, are flowing along pipes of the same diameter (5 cm) at 20°C and at the same flow velocity of  $3\text{ms}^{-1}$ . Determine whether the flow is streamline or turbulent in each fluid. For milk from Table 1.2,  $\mu = 2.10 \times 10^{-3} \text{N s m}^{-2}$  and  $\rho = 1030 \text{kg m}^{-3}$ .
9. Describe different types of viscosity.
10. What are the methods of frying food? What is the effect of frying on food? Discuss.