KERALA AGRICULTURAL UNIVERSITY

B.Tech (Food.Engg) 2010 Admission
IVth Semester Final Examination- July -2013

Cat. No: Fden.2206 **Marks: 80**
Title: Dairy Engineering and Technology (2+1) **Time: 3 hours**

I. State TRUE or FALSE **(10x1=10)**

a) The boiling point of milk is greater than water.
b) Adjustment of fat/SNF in milk is known as standardization.
c) Pasteurisation of milk is carried at a minimum temperature of 63^0C.
d) Yellow colour of milk is carotene.
e) Homogenisation of milk is necessary to prevent fat breakdown
f) _____ kg/m^3 is the density of fat in milk
g) Butter is _____type of emulsion.
h) _____ instrument used for determination of density of milk
i) Toned milk contains_____% fat & _____% SNF
j) Removal of suspended particles from milk by staining is called _____

II. Write short note on any *Ten* **(10x3=30)**

a) Milk transportation tanks
b) Types of homogenization
c) Bactofugation
d) Milk testing
e) Recombined and reconstituted milk
f) Milk collection and chilling
g) Packaging of milk
h) Clarifiers and separators
i) Drum drying of milk
j) LTLT pasteurisation
k) Cleaning-in-place
l) Special milks

III. Write short note on any *Five* **(5x6=30)**

a) Physical and chemical properties of milk

b) UHT processing

c) Packaging of milk and milk products

d) Dairy plant layout

e) Butter manufacturing

f) Working principle of a double stage homogenizer

g) Working of cream separator

V. Answer any *one* of the following. **(1x10=10)**

a) What is Sterilisation of milk? List the types of sterilization and describe the working principle of UHT sterilization with neat sketch.

OR

b) In HTST pasteurization milk enters from regenerator to the heating section at a temperature of 55^0C and leaves at 72^0C. Hot water at a temperature of 95^0C enters counter currently into the heat exchanger and leaves at 75^0C. What is the effectiveness of heat exchanger.