

(P.T.O.)

- B) State whether True or False. If false. Rewrite the statement after making necessary corrections in underlined word. (05)
- i) The "Doctor blades" are kept at an angle of 40° - 48° in the Drum dryer.
 - ii) The pH of Human milk is lower that favors bacterial growth.
 - iii) The objective of Malting operation is to convert Lipids into fatty acid.
 - iv) The caking defect of powder does not occur below a_w 0.4.
 - v) Hydraulic pressure jet Type Nozzle uses the pressure in the range of 141-211 kg/cm².

SECTION - 'B'

- Q. 3. A) Discuss briefly the various instant properties of milk powder. (05)
B) Give the steps involved in the manufacture of "High Heat Skim milk powder". (05)
- Q. 4. A) Discuss various body and textural and Flavour defects of Sweetened Condensed milk their causes and remedy. (05)
B) How evaporated milk is manufactured. (05)
- Q. 5. A) Differentiate between MVR and TVR. (03)
B) Enlist various factors that affect the heat stability of milk and also the stabilizing salts that are used to stabilize the milk against heat stability. (03)
C) Give the flow chart (with all technical details) for the manufacture of "Dried Skim Milk". (04)
- Q. 6. A) Write about Fluid bed Drier. (03)
B) Write about three body and textural defects of whole milk powder, their causes and remedies. (03)
C) Mention the steps (with all technical details) involved in the manufacture of infant milk food. (04)
- Q. 7. Differentiate between cow and Human milk. Discuss in details "Humanization of buffalo milk". (10)

ANSWER KEY

DT- 304 (3+1=4)

Condensed and Dried Milk

Q. 1 A) Choose the most appropriate answer from the options given below.

- i) a) Beta-Lactoglobulin
- ii) a) > 6.0 mg/g
- iii) c) *Aspergillus repens*
- iv) c) Gail Borden
- v) b) 26 %

B) Define the following.

- i) It is process to determine amount of chemical stabilizer (Trisodium phosphate and disodium phosphate) to be added to any given batch of evaporated milk for most satisfactory heat stability.
- ii) Quantity of undenatured whey protein.
- iii) It is the process to increase a size of powder particles so enhance its bulk density and made powder instant soluble.
- iv) The product obtained by mixing of malt extract and cereal grain flour in such a manner as to complete hydrolysis of starchy material it should not contain added sugar foreign fat and preservatives. It should contain cocoa powder (fat 7.5, Moisture 3.5).
- v) It is defect of EM which indicates abnormal flake formation when added into coffee due to low heat stability.

Q. 2 A) Give the reason for the following.

- i) Increase heat stability, prevent uninterrupted boiling, microbial inactivation and decrease age thickening.
- ii) Decrease energy consumption and increase powder quality.
- iii) To provide nuclei for crystallization of SCM.
- iv) To increase wettability of the powder.
- v) Contamination by yeast *Torula lactis condensii*, and storage at high temperature.

B) State whether True or False. If false, rewrite the statement after making necessary corrections.

- i) False : The Vacuum maintained inside the Drum dryer is between 63.5 to 73.6 cm Hg.
- ii) True :
- iii) False : The "Fishy flavor" in evaporated milk is due to the action of *proteus ichthyormis*.
- iv) False : The cow milk is modified to whey protein:Casein ratio of 60:40 to humanize it.
- v) True :
