

Q.30 Define vacuum. Describe with the help of diagram.

Q.31 Write short note on triangular & square pitch heat exchanger.

Q.32 What is the heat transfer? Write short note on radiation.

### SECTION-D

**Note:** Long answer type questions. Attempt any three questions. (3x10=30)

Q.33 Explain size & shape of food materials with help of diagrams & equation used for roundness & sphericity.

Q.34 Illustrate manometer? Explain U type manometer with the help of diagram.

Q.35 Describe the various type of fluid flow with the help of diagram

Q.36 What is heat transfer? Describe in detail the modes of heat transfer.

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**3rd Sem. / Food Technology**

**Subject : Principles of Food Engineering**

Time : 3 Hrs.

M.M. : 100

### SECTION-A

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

Q.1 SI unit of current \_\_\_\_\_, and is denoted by \_\_\_\_\_.

Q.2 L axis for colour measurement represents. \_\_\_\_\_

Q.3 Density is represented by \_\_\_\_\_.

Q.4 Equation for % porosity is \_\_\_\_\_.

Q.5 Reynolds No. is denoted by \_\_\_\_\_.

Q.6 The range of Reynolds No. for laminar flow is \_\_\_\_\_.

Q.7 The rate of heat transfer by conduction  
 $q_{\text{Conduction}} =$  \_\_\_\_\_.

(80)

(4)

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(1)

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Q.8 Equation for mass transfer coefficient  $k_c = \underline{\hspace{2cm}}$ .

Q.9 Time & temperature combination for LTLT is \_\_\_\_\_.

Q.10 Time & temperature combination for Autoclave is \_\_\_\_\_.

### SECTION-B

**Note:** Very Short answer type questions. Attempt any ten questions out of twelve questions. (10x2=20)

Q.11 Define viscosity.

Q.12 Define absolute pressure.

Q.13 Write down the two supplementary units of SI system of measurement & give their Symbols.

Q.14 Define Laminar fluid flow.

Q.15 Define pump

Q.16 Give the laqranjian method to describe the fluid flow.

Q.17 Define moisture content.

Q.18 Define positive displacement pump.

Q.19 Give the equation used for sphericity.

Q.20 Define relative humidity.

Q.21 Define WBT.

Q.22 Define density. Give its SI formula.

### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions. (8x5=40)

Q.23 Discuss the physical properties of food material with the help of examples.

Q.24 Write short note on centrifugal pump.

Q.25 Write down the all base units of SI system along with example & symbols.

Q.26 Define pumps, in list most common pump used in food industry.

Q.27 Write short note on boiler maintenance.

Q.28 Define gauge pressure. Describe with the help of diagram.

Q.29 Categorize the fluid flow on the basis of Change in time.