

- Q.20 Discuss the working principles of steam blanchers.
- Q.21 Enlist different parts of a simple vertical boiler and their function in brief.
- Q.22 Discuss the points to be considered while selecting equipment for the food industry.

#### **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

- Q.23 Describe the working principle of a spray dryer with a neat and clean diagram.
- Q.24 Give definition of heat exchangers and give classification based on Construction.
- Q.25 Describe the operation of a fluidized boiler with a neat and clean diagram.

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#### **4th Sem./ Food Technology**

#### **Subject :Principles of Food Engineering**

Time : 3 Hrs.

M.M. : 60

#### **SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (6x1=6)

- Q.1 What is the primary purpose of a pasteurizer?  
a) Sterilization      b) Dehydration  
c) heat treatment      d) Refrigeration
- Q.2 What is the main advantage of a fluidized bed dryer?  
a) Low energy consumption  
b) High drying efficiency  
c) small footprint  
d) Low initial cost
- Q.3 What is the main difference between a tunnel dryer and a kiln dryer?  
a) Temperature range    b) Size  
c) Operating principle    d) Energy source

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Q.4 What is the construction material commonly used for autoclaves?

- a) Stainless steel
- b) Aluminum
- c) Plastic
- d) Glass

Q.5 What is the purpose of vacuum dryer?

- a) Increase drying temperature
- b) Reduce drying time
- c) Prevent oxidation
- d) Enhance product flavor

Q.6 Which type of blancher uses steam as the heating medium?

- a) Steam blancher
- b) Water blancher
- c) Dual blancher
- d) Fluidized bed blancher

## SECTION-B

**Note:** Objective/ Completion type questions. All questions are compulsory.  $(6 \times 1 = 6)$

Q.7 Conduction is a mode of heat transfer that requires the movement of molecules. (True/False)

Q.8 PHE stands for Partial Heat Exchanger. (True/False)

Q.9 Extended surface heat exchangers are designed to increase heat transfer efficiency by maximizing surface area. (True/False)

Q.10 Porosity is rheological property of food materials. (True/False)

Q.11 The specific gravity of a substance is its density compared to the density of water. (True/False)

Q.12 Vacuum dryers operate at atmospheric pressure. (True/False)

## SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions.  $(8 \times 4 = 32)$

Q.13 Describe the working principle of a tunnel dryer with a neat and clean diagram.

Q.14 Define derived unit and fundamental units.

Q.15 Describe the working principle of a drum dryer with a neat and clean diagram.

Q.16 Why periodical maintenance is important for equipment used in the food industry?

Q.17 Discuss the principle behind freeze dryers?

Q.18 Describe the working principle of a falling film evaporator with a neat and clean diagram.

Q.19 Define thermal conductivity and its importance in food science and technology.