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**P.G. DIPLOMA IN FOOD SCIENCE AND
TECHNOLOGY (PGDFT)**

Term-End Examination

June, 2017

**MFT-003 : FOOD PROCESSING AND
ENGINEERING**

Time : 3 hours

Maximum Marks : 70

Note : (i) Attempt any five questions.

(ii) All questions carry equal marks.

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1. Explain the following terms (any seven) : 7x2=14
 - (a) Angle of repose
 - (b) Steady-state process
 - (c) Newtonian Fluid
 - (d) Kirchhoff's Law
 - (e) Cold chain
 - (f) Aerodynamic properties
 - (g) Unit operation
 - (h) Crushing Efficiency
 - (i) Membrane separation

 2.
 - (a) Write importance of physical and thermal properties of food materials in agricultural processing. 2
 - (b) Describe the method of screen analysis to determine size of fine materials. 4
 - (c) What is coefficient of friction ? Write its application in grain processing. 4
 - (d) Describe the method for determination of specific heat of grains. 4

3. (a) Explain types of energy in a system. 3
- (b) An evaporator has a rated capacity of evaporating 200 kg/h of water. Calculate the rate of production of juice concentrate containing 50% total solids from raw juice containing 15% solids. 6
- (c) Describe the principle and working of a centrifugal pump. 5
4. (a) Describe important features of storage and transportation of fruits and vegetables. 4
- (b) Explain the principle and process of Controlled Atmosphere Storage. 5
- (c) Explain the principle and working of a pneumatic conveyor with the help of diagram. 5
5. (a) Explain "size reduction" of food and describe the factors affecting size reduction of food. 5
- (b) What is centrifugation ? How centrifuges are classified ? Enlist important types of centrifuges. 5
- (c) Define "expression". Explain factors affecting expressions of oil. 4
6. (a) What are the advantages of thermal processing of foods ? Explain salient features of pasteurization and baking. 2+3+3
- (b) What is Extrusion Cooking ? Give its advantages and disadvantages. Enlist important types of extruders. 2+3+1

7. (a) Give the principle and benefits of low-temperature preservation. 5
- (b) Enlist important type of freezers and explain any one type of freezer. 5
- (c) What are the factors that affect microbial inactivation in Pulsed Electric Field (PEF) method ? 4
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