

Total number of printed pages—4

53 (FPT 702) PEDG

2019

FOOD PROCESS EQUIPMENT DESIGN

Paper : FPT 702

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer **any five** questions.

1. (a) Explain about the corrosion resistance of materials during the selection for food equipment design. 4
- (b) How stainless steel is suitable for the designing of food process equipment? Explain. 8
- (c) Discuss about the different stresses which are to be considered during the fabrication of food equipment. 8

Contd.

2. (a) Discuss about *any five* constructional characteristics that has to be considered during the selection of food process equipment. 10
- (b) Explain the working mechanism of Chain conveyors with suitable diagram. 10
3. (a) Give one representative diagram for the following conveyors : 2x3=6
- (i) Belt conveyor
- (ii) Roll conveyor
- (iii) Skate-wheel conveyor.
- (b) Write a short note on vibratory conveyors. 6
- (c) Detail the functioning of pneumatic conveyors with proper diagram. 8
4. (a) Define the term—'Grading'. 2



- (b) Write briefly about the following sorting machines : 4+3+3=10
- (i) Cylindrical separators
- (ii) Disk separators
- (iii) weight sorters.
- (c) Discuss in short about the following screening systems : 4+4=8
- (i) Belt Screens
- (ii) Trommels.
5. (a) How can heat exchangers be classified? 4
- (b) Discuss the working principle of double pipe heat exchangers. 6
- (c) Give the schematic diagram for shell and tube heat exchanger. 6
- (d) Write about Plate type heat exchanger. 4

6. Write about the design aspects of following components in shell and tube heat exchanger :

(i) Tube Sheet 10

(ii) Shell side and tube side passes 5

(iii) Channel and channel cover. 5

7. Discuss about the following components of pressure vessel :

(i) Shell 10

(ii) Nozzle. 10

