

Total number of printed pages-3

53 (FPT 801) PDPE

2018

**PLANT DESIGN AND PROJECT  
ENGINEERING**

Paper : FPT 801

Full Marks : 100

Time : Three hours

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

Answer **any five** questions.

1. (a) What is the main objective of food plant process design? 2
- (b) What are safety hazards and health/hygiene hazards? 2
- (c) Explain how environmental protection is executed in a food plant. 8
- (d) What are the different types of process diagrams? Give examples of each one of them. 6
- (e) What is material handling? 2

Contd.

2. (a) Mr. X wants to establish a completely new soft-drink making industry. What initial survey he has to carry out to check the possibility of its establishment? 10
- (b) What are the six basic objectives of an effective plant layout? 6
- (c) State some advantages and disadvantages of plant location in urban and rural area. 4
3. Design and draw a plant layout of *any* food processing plant. Give proper labelling and directions considering *any one* type of process plant layout type. (straight line, L-type, U-type or for Z-type process plant layout). 20
4. (a) What are the queries to be made for final economic analysis of a product? 6
- (b) Describe the life cycle of a product with a neat diagram. 5
- (c) What is called cost of production? Explain the components of different types of cost of production. 1+8

5. (a) What is break-even analysis? Draw a diagram of break-even analysis and explain. 1+10
- (b) What is a project economics of a plant? Write about different types of capital requirements for a food processing venture. 1+8
6. (a) Define depreciation. How is it evaluated? 2+8
- (b) Write the basic objectives of the development of a successful process route. 10
7. (a) What do you understand by replacement? List down the reasons for making replacements. 2+4
- (b) What are minimum acceptable rate of return and profitability standard? 2
- (c) Write short notes on: 3×4
- (i) Salvage value
  - (ii) Current value
  - (iii) Recovery period
  - (iv) Cash flow.

