Total number of printed pages:2 **Programme (UG)/8th /UFET801**

2025

PLANT DESIGN AND PROJECT ENGINEERING

Full Marks : 100

Time : Three hours

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

*Answer **any five** questions.*

1.	a)	Discuss in detail about the types of capital/capital investment required for any processing venture.	20
2.	a)	What is meant by cost of production? Explain in detail about the two types of costs considered under cost of production.	1+14=15
	b)	Explain the break even analysis of a project with suitable diagram.	5
3.	a)	Describe the general guidelines for choosing a plant location.	10
	b)	Write any two methods (with example) to select the location for a plant.	10
4.	a)	What is depreciation? State any two reasons for depreciation.	1+2=3
	b)	On 1st October 2010, Madhawan Pvt. Ltd purchased a machine for Rs. 230000 and spent Rs. 10000 on transportation and Rs. 10000 on its installation. The effective working life of the machine will be 10 years with a salvage value of Rs. 25000. Prepare a machine and depreciation account for the first seven years by providing depreciation on straight line and diminishing rate method. Accounts are closed on March 31st every year.	8+9=17
5.	a)	Write shot notes on (Any two) i) Pre-feasibility study iii) Plant size ii) Social cost benefit analysis	5×2=10
	b)	Give an overview of the identification stage of feasibility study.	5
	c)	Explain how a large number of project ideas with poor chances of success are screened out during the preliminary screening stage.	5

6.	a)	Discuss the basic objectives of a plant layout.	6
	b)	Describe the types of flow patterns used in making plant layout.	4
	c)	Draw a plant layout of any food processing industry with proper labelling.	10
7.	a)	Define profitability standard and minimum acceptable rate of return. Write any two methods for calculating profitability that do not consider time value of money.	2+10=12
	b)	The annual summary of A/B Pvt. Ltd. Kokrajhar is given as follows, Raw materials (Rs./Unit) 40.00 Transportation (Rs./Unit) 13.00 Labour Charges (Rs./Unit) 5.00 Fixed Costs (Rs.) 150000.00 Selling price (Rs./Unit) 65.00 Annual sales of units 15000 Calculate, i) the units to be sold at zero profit. ii) the amount of profit reaped if the annual sales increased by 25%. Or A product currently sells for Rs. 120.00 per unit. The variable cost is Rs. 40.00 and 10000 units are sold annually with a profit gain of Rs. 30000.00. A new design is suggested to the existing plant that will increase the variable cost by 15% and fixed cost by 10%. The sales will increase to 12000 units per year. i) Calculate the selling price to get the break even point at new design. ii) Calculate the amount of profit at new design if the old selling price is considered.	8