A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 57902

B.E./B.Tech. DEGREE EXAMINATION, NOV 2018

Seventh Semester

Chemical Engineering

15UCH702 – CHEMICAL ENGINEERING PROCESS ECONOMICS AND INDUSTIRAL MANAGEMENT

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. _____is a group of individuals working together to achieve one or more objectives. CO1- R

   (a) Planning (b) An Organization (c) Staffing function (d) Communication

2. The study of relationship between man and his working environments. CO1- R

   (a) Time Study (b) Ergonomic (c) Motion Study (d) All of these

3. A sum of money at simple interest amounts to Rs. 815 in 3 years and to Rs. 854 in 4 years. The sum is: CO2- R

   (a) Rs. 650 (b) Rs. 690 (c) Rs. 698 (d) Rs.700

4. For a given fluid, as the pipe diameter increases, the pumping cost CO2- R

   (a) Decreases (b) Increases

   (c) Remains the same (d) May increase or decrease.

5. Payback period is CO3- R

   (a) and economic life of a project are the same

   (b) is the length of time over which the earnings on a project equals the investment

   (c) is affected by the variations in earnings after the recovery of the investment

   (d) all *a, b* and *c*

6. In a manufacturing industry, break-even point occurs, when the CO3- R

(a) Annual sales equal the fixed cost

(b) Total annual product cost equals the total annual sales

(c) Total annual rate of production equals the assigned value

(d) Annual profit equals the expected value

7. The factor that is defined by the ratio of maximum instantaneous production rate to the production rate for which the equipment is designed is _____ CO4- R

(a) Load (b) Capacity (c) Diversity (d) Demand

8. 'Six-tenth factor' rule is used for estimating the CO4- R

(a) Utilities cost (b) Cost of piping

(c) Equipment installation cost (d) Equipment cost by scaling

9. In economic evaluation of an on-going company the ratio of net sales to total investment is _____ CO5- R

(a) Appraisal value (b) Bond value (c) Earning value (d) Share value

10. The objective function in economic balance is a measure of CO5- R

(a) Production performance (b) Equipment performance

(c) Process performance (d) Economic performance

PART – B (5 x 2= 10Marks)

11. Expand SWOT, and explain with example. CO1- U

12. What are fixed cost and variable costs? CO2- U

13. A storage tank was priced at Rs.5000 in 1982 when the cost index was 460. What is its value today when the cost index is 800? CO3- R

14. Compute all the possible balance sheet ratios you know? CO4- R

15. Why do you expect the economic balance in a company? CO5- U

PART – C (5 x 16= 80Marks)

16.	(a)	Explain in detail about the organization behavior.	CO1-U	(16)
		Or		
	(b)	Explain on forecasting, routing, scheduling, costs control, inventory control	CO1- U	(16)
17.	(a)	The fixed cost in the manufacture of a processed food product for the year 2012-2013 is $4,00,000. The variable costs per product is 430. The estimated sales for the year is valued at $18,00,000. Each Product sells at$180. For the given data (a) Find the break-even point in sales. (b) If $14,00,000 will be likely sales turnover made for the next budget period, calculate the contribution and profit.	CO2- App	(16)
		Or		
	(b)	A process plant has an initial investment of Rs.50 lakhs. The estimated salvage value is Rs.2 lakhs. It has a life of 8 years. Estimate the book value of the plant after 5 years by (a) Straight line depreciation method (b) Declining balance method and (c) Sinking fund method with a sinking fund interest rate of 10%.	CO2- App	(16)
18.	(a)	Discuss the different types of methods used for economic solution of alternatives in detail.	CO3- U	(16)
		Or		
	(b)	What are the comparable annual costs for the following two paint mills used in grinding pigments in oil to make a finished paint product if money is worth 8%? Mill *A* costs $12,000, has a life of 14 years, a salvage value of $2,000, and annual operating costs of $3,000. Mill *B* has a life of 14 years, operating costs of $4,000 and has a salvage value of $1,000. What are the respective present worth's of services rendered by the two mills given above.	CO3- App	(16)

19.	(a)	The following data are available for a company with no funded debt, current assets $250, current liabilities $40, Stock 8 million shares with par value per share $50, quick assets $150 million, surplus (earnings retained) $610. Fixed assets $1200 and other assets none. Prepare a balance sheet for the above data (All the USD($) values are in millions). Compute all the possible balance sheet ratios for the above problem.	CO4 -App	(16)
		Or		
	(b)	Bring out the general format for the preparation of trading account, Profit loss account and Balance sheet.	CO4- U	(16)
20.	(a)	A heat exchanger A in a pharmaceutical company has an estimated life of 5 years and costs $7,500 with an annual operating costs of $1,000. A second exchanger B has a cost of 10,000 and annual cost of $800 with life of 5 years. Exchanger A has a salvage value of $500, and exchanger B $600, Money is worth 5%. What are the annual comparable costs of exchanger A and B?	CO5-U	(16)
		Or		
	(b)	Explain the economics balance for evaporator with an example.	CO5-U	(16)