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Question Paper Code: 57902

B.E./B.Tech. DEGREE EXAMINATION, NOV 2019

Seventh Semester

Chemical Engineering

15UCH702 – CHEMICAL ENGINEERING PROCESS ECONOMICS AND INDUSTRIAL
MANAGEMENT

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Which management function involves monitoring, comparing and correcting work performance? CO1- R
(a) Organizing (b) Planning (c) Controlling (d) Leading
- Work study is also recognized as CO1- R
(a) Time study (b) Motion study (c) Both a and b (d) None of the above
- Which of the following is an example of a capital cost? CO2- R
(a) Fixed equipment (b) Direct costs
(c) Fixed costs (d) Available raw materials cost
- The capital that is consumed by an economy or a firm in the production process is known as: CO2- R
(a) Capital cost (b) Production cost (c) Dead-weight loss (d) Depreciation
- _____ varies inversely with profitability CO3- R
(a) Liquidity (b) Risk (c) Blue (d) False
- Which of the following is not a forecasting technique? CO3- R
(a) Judgemental (b) Time series (c) Time horizon (d) Associative

7. _____ of the profitability of the firm over a period of time such as a year. CO4- R
- (a) The balance sheet is a summary (b) The income statement is a summary
(c) That statement of cash flows is a summary (d) The audit report is a summary
8. One problem with comparing financial ratios prepared by different reporting agencies is CO4- R
- (a) Some agencies receive financial information later than others
(b) Some agencies are careless in their reporting
(c) Agencies vary in their policies as to what is included in specific calculations
(d) None of the above
9. _____ is a systematic record of all the economic transaction between one country and rest of the world. CO5- R
- (a) Balance of trade (b) Budget
(c) Balance of payments (d) Balance of transaction
10. The _____ of a chemical company can be obtained directly from balance sheet as the difference between current assets and current liabilities. CO5- R
- (a) Cash ratio (b) Net working capital (c) Current ratio (d) Liquids assets

PART – B (5 x 2= 10Marks)

11. What are the types of organization? CO1- R
12. Define depreciation. CO2- R
13. Write the uses of sensitivity analysis. CO3- R
14. Define annual cost method. CO4- R
15. Write the essentials of economic balance. CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) Explain work measurement techniques involving time and motion study in production control. CO1-U (16)
- Or
- (b) Explain briefly about the inventory, inventory control and techniques of inventory control. CO1-U (16)
17. (a) Explain in detail the time value of money and its effect with increase in value. CO2- App (16)

Or

- (b) (i) Explain briefly about how to estimate the capital cost and what are the factors contributing to the increase of capital cost? CO2- App (10)
- (ii) Recently a cast iron leaf pressure filter with 100 ft² was purchased for clarifying an inorganic liquid stream for \$15,000. In a similar application, the company will need a 450 ft² cast iron leaf pressure filter. The size exponent for this type filter is 0.6 Estimate the purchased price of the 450 ft² unit. (6)
18. (a) (i) A drier today costs \$221,000. The estimated inflation rates are expected to be: CO3- Ana (8)
- First year = 3.5%
Second year = 4.2%
Third year = 4.7%
- What is the cost of that drier 3 years hence?
- (ii) A company is considering the manufacture of ethylene oxide as an intermediate for its polymer division. The process to be used is the direct oxidation of ethylene. The company built a similar unit in 1997 that had a rated capacity of 100,000 tons annually for \$66,000,000. The projected production of the new facility is to be 150,000 tons annually. Estimate the fixed capital investment in late 2001 dollars to produce the required ethylene oxide. CO3- Ana (8)

Or

- (b) Explain how to measure inflations and reasons for inflation with its effects. CO3- Ana (16)
19. (a) The following is the Balance sheet of a firm: CO4- U (16)

Liabilities	Amount	Assets	Amount
Share capital	2,00,000	Land & buildings	1,40,000
Profit/loss account	30,000	Plant & machinery	3,50,000
General reserve	40,000	stock	2,00,000
12% Debentures	4,20,000	Sundry debtors	1,00,000
Sundry creditors	1,00,000	Bills Receivable	10,000
Bills payable	50,000	Cash at bank	40,000
Total	8,40,000	Total	8,40,000

Calculate

- (i) Current ratio
- (ii) Quick ratio
- (iii) Inventory to working capital
- (iv) Debt to equity ratio
- (v) Proprietary ratio
- (vi) Capital gearing ratio

Or

- (b) Explain in detail about the analysis of performance and growth. CO4- U (16)
20. (a) Explain on how an economic balance is used to design Heat exchanger. CO5- App (16)

Or

- (b) How the cost estimation of evaporator can be optimized using economic balance approach? Discuss with suitable illustrations in details.. CO5- App (16)