MODEL QUESTION PAPER
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION
CHEMICAL ENGINEERING BRANCH
(2013 scheme)

13.704 ECONOMICS AND MANAGEMENT FOR PROCESS INDUSTRIES

Time :3hours **Max. Marks: 100**

Part A

Answer *all* questions. Each question carries 2 marks

1) Discuss various methods of cost comparison
2) Define unacost .Establish the relationship between Unacost and present Value
3) Discuss capital recovery factor
4) Explain the continuous interest operator
5) Describe the terms displacement and replacement
6) Define inflation. List its causes.
7) Differentiate Return on Original Investments and Return on Average Investments
8) Discuss Order of Magnitude of Cost Estimation
9) Describe the significance of Break Even Point
10) Explain Economic Production Charts. (10 x 2=20 marks)

Part B

Answer *one* full question from each module

Module 1

11) a) Two machines have the following cost comparison. If money is worth 12 percent per year .Compare which machine is more economical?

	A	B
First cost Rs.	4,40000	3,60,000
Uniform end of year maintenance (Rs.Year)	60,000	80,000
Salvage Value, Rs.	30,00	8,000
Service Life, years	3	2

(12 marks)

b) A person owes Rs.1,000 due in 4months and RS.500 due in one year. What single payment 6months from now will discharge the debt if money is worth 8 percent per year? (8 marks)

12a) An equipment costing Rs 50,000 with a salvage value of 2000 and a service life of 8 years , permits the elimination of laborers whose daily wage is Rs.50. The plant operates for 300 days /year. What interest rate is earned? (10 marks)

b) Explain different methods of depreciation (10marks)

Module II

13a) Define Una burden. Write the capitalized cost of Unaburden (10 marks)

b) Compare and contrast technological advancement with inflation (10 marks)

14a) An article that lasts one year can be purchased for Rs.10,000 and written off in one year. How much can be paid for an article that lasts 5 years if it can be written off in 3years for tax purposes using straight line depreciation when the rate of return is 16 percent per year after a 46 percent tax with an inflation rate of 10 percent per year. (12 marks)

b) Develop a relationship for discounting a flow increasing in a straight line from $\overline{R}_1$ at zero time to $\overline{R}_2$ at time n .

(8 marks)

Module III

15a) Explain the need of working capital for an industrial plant and describe the components of money to be provided for. (10 marks)

b) Discuss different types of cost indices used in cost estimation (10 marks)

16a)Explain different types of capital cost estimates. (10 marks)

b) Explain the various components of total product cost (10 marks)

Module IV

17. A project can produce 12, 000 units per year at 100% capacity. The variable cost per unit is Rs 3 up to 100% capacity. Fixed costs are Rs 10,000 per year .Find the Break Even point if the selling price is Rs. 5 per year. Now the manufacturer finds that he can sell only 80% at Rs 5 per unit. How much should he charge for additional unit if he brings production up to 100% capacity and increase profits after taxes by an additional Rs. 1000. The tax rate is 52% (20 marks)

18. Explain the different methods of profitability evaluation. Describe the advantages and disadvantages of each. (20 marks)