Econ 324 Fall 1992
Managerial Economics R. Claycombe

Second Exam

Write all answers in your blue book and show all work there. Return your exam in your blue book.

35 pts.
1) Suppose that you have the following demand equation.

$$Q = 100 + .5*Price + .1*Income - .3*Price\ Substitute$$

a) How would you use such an equation to forecast future values for Q?
b) If such a forecast required extrapolation, what danger lies in this methodology?
c) If the data in your forecast were seasonally affected, how could you deal with this problem (if data were sufficient).

20 pts.
2) The following production function for product A has been estimated.

$$Log(Q) = 2 + .4Log(Labor) + .4Log(Machines) + .2Log(Energy)$$

a) Briefly discuss how one would use such an equation to estimate cost. Be sure to develop your discussion in terms of different "plant sizes."
b) Roughly sketch short-run average cost curves for several plant sizes, taking care to depict the returns to scale implicit in the equation.

15 pts.
3) ABC corporation spends $10000 on 5 workers (direct labor) to produce 1000 units of good A. Other costs (materials, energy etc.) come to $20000. Suppose that if workers are laid off a union contract guarantees them 80% of their salary.
a) What are the relevant costs of the 1000 units?
b) If those 1000 units could be sold for $25000, would you take or leave the business? Why?

30 pts.
4) Your firm has carefully tracked variable cost for your product over the last year as shown below. Your plant size was reduced at mid year.

Month	Total Variable Cost(1000's)	Quantity(1000's)
Jan	35	9
Feb	42	11
Mar	50	12
Apr	57	13
May	37	10
June	33	8
July	32	6
Aug	28	5
Sept	22	3
Oct	19	2
Nov	26	4
Dec	36	7

a) Use the data to calculate marginal costs.
b) If current orders for next month are 8000 and an order for an additional 1000 units is pending, what would the price need to be to make the additional 1000 units profitable?
c) If you were using regression techniques to analyze the data, what forms of the model would you try?

I have neither given nor received unfair aid on this test.

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