First Semester M.B.A.Degree Examination,

June/ July 2009

(Directorate of Correspondence Course)

(New Scheme)

M.B.A. DP : 104 : Quantitative Techniques

Time : 3 Hours Max. Marks : 80

Section - A

Answer the following sub-questions in two or three sentences each. Each question carries two marks. (5x2=10)

1. a. Define a diagonal matrix giving an example.
   b. Define time series. Mention the components of time series.
   c. If Mode = 28, Mean = 10, find median.
   d. If $TC = 75x^2 - 25x + 100$, find fixed cost, variable cost and average cost function.
   e. Define a singular matrix giving an example.

Section - B

Answer any FIVE of the following. Eachs question carries SEVEN marks

2. If $A = \begin{bmatrix} 6 & 5 \\ 3 & 8 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 1 \\ 3 & 6 \end{bmatrix}$, verify whether AB = BA.

3. The total cost is $x^3 - 4x^2 + 7x$. Find the level of output at which average cost is minimum.

4. Compute coefficient of variation from the following data

Company A	280	282	284	280	282
Company B	490	440	410	430	480

5. Compute correlation coefficient from the following distribution.

X	46	42	44	40	43	41	45
Y	40	38	36	35	39	37	41

6. Compute median for the following data

Age (in yrs)	0-10	10-20	20-30	30-40	40-50
No. of persons	3	5	9	3	2

7. Calculate mode from the following distribution

Sales	20-30	30-40	40-50	50-60	60-70
No. of persons	30	58	62	85	70

Section - C

Answer the following questions. Q.No. 8 and 9 carry 10 marks each and Q.no. 10 carries 15 marks. **(10+10+15=35)**

8. a) Define correlation. Explain the different types of correlation.

OR

b) Fit a straight line trend for the following data and estimate the production for the year.

Year	2000	2001	2002	2003	2004	2005	2006
Production (in '000 tonnes)	77	88	94	85	91	98	90

9. a) Solve by inverse method

$2x + y + z = 7$

$3x - y - z = -2$

$x + 2y - 3z = -4$

OR

b) Find the regression equation to estimate the sales of tyres when motor registration is 850.

Motor Registration	600	630	720	750	800
No.of tyres sold	1250	1100	1300	1350	1500

10. Compute Marshalls and Edgeworths index number and verify whether it satisfies time reversal test.

Commodity	2002		2005	
	Price	Quantity	Price	Quantity
A	100	10	110	6
B	150	15	170	18
C	5	50	4	30

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