Total No. of Questions : 6] **SEAT No. :**

P2316 **[Total No. of Pages :3**

[4670]-14
M.B.A.
104: STATISTICAL AND QUANTITATIVE METHODS
(2008 Pattern) (Semester-I)

Time : 3 Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Solve any two questions from section I and any two questions from sectionII.***
2) ***Use of electronic calculators and statistical tables are allowed.***
3) ***Graph paper will not be provided, draw all graphs and sketches on the answer paper.***

SECTION-I

Q1) a) Calculate mean, median and mode from the following data. **[9]**

Weight in gms	50-75	75-100	100-125	125-150	150-175	175-200
No. of fruits	15	32	45	68	39	10

b) Following data gives price of a share in the market for 6 days. Calculate standard deviation and coefficient of variation: **[8]**

Price in Rs. 120 124 120 118 123 126

Q2) a) Given the following data for two variables calculate Karl Pearson's coefficient of correlation: **[9]**

X:	10	9	15	18	12	7	5	6
Y:	32	29	47	56	38	23	17	20

b) Given the following extract for a bivariate data. Find equation of regression line Y on X and estimate the value of Y when X=30

$\overline{X} = 35, \quad \overline{Y} = 50, \quad \sigma_x = 6, \quad \sigma_y = 8$

$r = 0.8$ **[8]**

P.T.O.

Q3) a) Find coefficient of association between eye colour of fathers and sons from the following data. **[6]**

Fathers with dark eyes having sons with dark eyes	50
Fathers with not dark eyes but sons with dark eyes	90
Fathers with dark eyes but sons with not dark eyes	80
Fathers with not dark eyes but sons with not dark eyes	780

b) Eight coins are tossed simultaneously. Find the probability of obtaining exactly 3 heads. **[6]**

c) A card is drawn from a well shuffled pack of 52 cards, find the probability of getting card as spade card or a king. **[5]**

SECTION-II

Q4) a) Solve the following L.P.P. Graphically

Maximise $Z=250x+200y$

Subject to $6x+4y \leq 240$

$2x+5y \leq 150$

$4x+3y \leq 120$

$y \leq 20$

$x \geq 0, y \geq 0$ **[9]**

b) Following data gives costs incurred of performing different jobs on 4 machines. Find optimum allocation

Jobs	Machines			
	1	2	3	4
A	10	12	15	9
B	8	6	3	10
C	4	5	12	17
D	11	6	9	12

[9]

Q5) a) The following matrix gives unit cost of transportation from 3 factories to 4 warehouses, capacity at factories and requirement at warehouses. Find initial basic feasible solution using

i) North west corner method

ii) Matrix minimum method

iii) Vogel's approximation method and compare costs. **[9]**

b) Patients come to a doctor at a rate of 25 per hour. The time required to serve at the rate of 120 seconds. Find the average waiting time of a patient. **[9]**

Q6) a) The probability distribution of monthly sales of an item is as follows.

Monthly sales units	0	1	2	3	4	5	6
Probability	0.01	0.06	0.25	0.30	0.22	0.10	0.06

Use the random Nos 58, 69, 32, 45, 07, 95, 32, 56 and find sales for 8 months. **[9]**

b) Solve the following game:

	B_1	B_2
A_1	6	4
A_2	3	7

[9]