Business Statistics & Mathematics

Punjab University BCOM/ADP Commerce I Paper 2008

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

Note: Attempt any five questions in all taking two questions from each section. Question No 1 is compulsory. All questions carry equal marks.

Q.1 Provide short answers for the following. Unnecessary details will be penalized.

i. What is the difference between primary & secondary data?
ii. Define the term skewness.
iii. What is meant by mode?
iv. Define correlation.
v. What is meant by continuous variable?
vi. What is meant by population?
vii. Under what conditions, we cannot find Harmonic mean?
viii. What is meant by quadratic equation?
ix. Define symmetric matrix.
x. Define the term Annuity.

Section I

Q.2 From the following frequency distribution, find: (a) A.M (b) Mode (c) Semi Inter Quartile Range.

Classes	120-129	130-139	140-149	150-159	160-169	170-179	180-189	190-199
Frequency	4	17	28	25	18	13	6	5

Q.3 (a) From the following data find index no of 2005 on the bases of 2003 by using Fisher's formula.

Year	A		B		C		D		E	
	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
2003	9	10	6	80	3	17	9	20	6	30
2005	11	5	9	100	2	20	7	15	8	40

(b) Two cards are drawn at random from a pack of 52 cards, what is the probability that:
(i) Both are of same color
(ii) Both are of different color

Q.4 From the following data calculate:

(i) Correlation Coefficient **(ii)** Both Regression Coefficients

Supply (X)	80	82	86	91	83	85	89	96	93
Price (Y)	145	140	130	124	133	127	120	110	116

Q.5 Give that population consists of six values 1, 5, 7, 11, 15, 17. How many samples of size n = 2 can be drawn without replacement from this population? By forming a sampling distribution of the sample means, state and verify the relation between:

(i) Mean of the sampling distribution of the mean and the population mean.

(ii) Variance of the sampling distribution of the means and the population variance.

Section II

Q.6 (a) Solve the equation for x

$\frac{2x-10}{x+4} + 3 \quad = \frac{x-2}{x-3} + 4$

(b) Solve for "y": (y – 3) (y + 2) = -4

Q.7 (a) If $A = \begin{bmatrix} 2 & -3 & 5 \\ k & 4 & 6 \\ 2 & 0 & 8 \end{bmatrix}$ *is singular matrix then find* K.

(b) $A = \begin{bmatrix} 1 & 3 & 2 \\ 3 & 2 & 1 \\ 4 & 5 & 6 \end{bmatrix}, B = \begin{bmatrix} -2 & 5 & 4 \\ 0 & 3 & -5 \\ -1 & 4 & 2 \end{bmatrix}$ *then find* AB & $(2A - 3B)$

Q.8 (a) Find the sum of all odd integers from 7 to 7291 inclusive.

(b) A house worth Rs. 160, 000 twenty years ago has increased in value by 10% each year because of inflation. What is its worth today?

Q.9 (a) A machine in shoe factory purchased for Rs. 8500. After 8 years useful life its scrap value will be Rs. 3,000. Find the depreciation rate.

(b) A house is rented for Rs. 9,000 per month, with each month's rent payable in advance. If the interest rate is 12% compounded monthly and the rent is deposited in an account. What will be the amount of rent for two years?

The End