Business Statistics & Mathematics

Punjab University BCOM/ADP Commerce I Paper 2014

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.

Section I

Q.1 Calculate Arithmetic Mean, Median and Coefficient of Variation.

Weekly Wages Rs.	No of Workers	Weekly Wages Rs.	No of Workers
0-40	6	160-200	45
40-80	15	200-240	27
80-120	22	240-280	13
120-160	30	280-320	6

Q.2

X: 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15

Y: 09, 07, 10, 03, 13, 11, 14, 10, 14, 12, 18

Required: Calculate Co-efficient of correlation and also the line of regression y on x.

Q.3. Calculate Price Index Numbers using Laspeyre's, Paasche's, Fisher's and Marshall's formulae for 2001 taking 2000 as base year from the following data:

Commodity	2000		2001	
	Price	Quantity	Price	Quantity
Wheat	30	110	32	112
Rice	40	100	38	110
Jawar	25	50	22	80
Maize	10	40	15	50

Q.4.

Eye Colour	Hair Colour			
	Light Black	Dark Black	Brown	Total
Blue	26	21	13	60
Black	25	42	21	88
Brown	19	18	15	52
Total	70	81	49	200

Test the hypothesis that hair color and eye color are independent. The table value of Chi-square at 4 degree of freedom at 5% level of significance is 9.49.

Section II

Q.5 $If\ A = \begin{bmatrix} 2 & -3 & 4 \\ 1 & 5 & -2 \\ 4 & 2 & 6 \end{bmatrix}, B = \begin{bmatrix} 1 & -2 & 3 \\ 4 & -5 & -6 \\ 7 & 8 & 9 \end{bmatrix}\ Calculate\ (i)A + B\ (ii)2A - 3B\ (iii)AB$

Q.6 (a) Solve the following quadratic equation $2x^2 + 15x + 18 = 0$

(b) The difference of two numbers is 33. The larger number is one more than three times the smaller number. Find the numbers.

Q.7 (a) The sum of 10 terms of an A.p; whose last term is 28, is 145. Find the first term and the common difference.

(b) Find the sum of the series:

$1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}$, ... to infinity cannot exceed 2.

Q.8 Find out the effective rate of interest equivalent to the nominal rate of 8% p.a. Compounded quarterly.

The End