

Business Statistics & Mathematics

Punjab University BCOM/ADP Commerce I Paper 2014 Supplementary

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

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

Required: Calculate Arithmetic Mean, Harmonic Mean, Standard Deviation and Co-efficient of Variation.

Q.2

X	16	72	73	63	83	80	66	66	74	62
Y	40	52	43	49	61	58	44	58	50	45

Required: Calculate Coefficient of Correlation and Comment on the answer.

Q.3. Test the association

Attributes	A1	A2	A3
B1	20	15	30
B2	30	18	35
B3	35	20	40

The value of Chi-Square at 5% level of significance 4 d.f is 9.488

Q.4. Construct index number for 2002 from the following data taking 2000 as base using:

(i) Laspere's Index Number (ii) Paasche's Index Number (iii) Fisher's Index Number

Commodity	2000		2002	
	Price	Quantity	Price	Quantity
A	5	100	6	120
B	7	120	10	80
C	10	80	12	80
D	4	50	5	60
E	8	70	8	80

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 $A = \begin{bmatrix} 1 & 3 & 2 \\ 3 & 2 & 0 \\ 4 & 5 & 6 \end{bmatrix}$, $B = \begin{bmatrix} -2 & 5 & 4 \\ 0 & 3 & -5 \\ -1 & 4 & 2 \end{bmatrix}$ Calculate (i) $A + B$ (ii) $2A - 3B$ (iii) AB

Q.6 a) Solve the following simultaneous equations:

$$2x + y = 7$$

$$3x + 2y = -12$$

b) Solve the quadratic equation:

$$6x^2 - 5x = 6$$

Q.7 Find out the compound amount and compound interest at the end of 3 years on a sum of Rs.20,000 borrowed at 6% compounded annually.

Q.8 A 90 days Rs. 4,000, 7% interest bearing note dated April 4, was discounted on May 4, at a discount rate of 8%. What was the discounted value of the note? (Take 360 days in the year)

The End