UNIVERSITY OF THE PUNJAB

PART – I S/2014
Examination:- B. Com.

Roll No. .....

Subject: Business Statistics & Mathematics **TIME ALLOWED: 3 hrs.**
PAPER: BC-301 **MAX. MARKS: 100**

NOTE: Attempt any FIVE questions. All questions carry equal marks. Attempt at least TWO Questions from each section.

SECTION-I

1.

Wages Rs.	No. of workers'	Wages Rs.	No. of workers'	Wages Rs.	No. of workers
117—124	13	145—152	56	173—180	55
124—131	17	152—159	73	180—187	40
131—138	33	159—166	81	187—194	20
138—145	47	166—173	65		

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

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.

3. **Test for Association:**

	A_1	A_2	A_3
B_1	20	15	30
B_2	30	18	35
B_3	35	20	40

(Tabulated value of chi-square for 4 degrees of freedom at 5% level of significance = 9.488)

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

SECTION - II

5. If

$$A = \begin{pmatrix} 1 & 3 & 2 \\ 3 & 2 & 0 \\ 4 & 5 & 6 \end{pmatrix} \quad \text{and} \quad B = \begin{pmatrix} -2 & 5 & 4 \\ 0 & 3 & -5 \\ -1 & 4 & 2 \end{pmatrix}$$

Calculate: (i) A + B (ii) 2A – 3B (iii) AB

6. **a)** Solve the following simultaneous equations.

$$2x + y = -7$$
$$3x + 2y = -12$$

b) Solve the quadratic equation

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

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.

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)