UNIVERSITY OF THE PUNJAB

PART – I   S/2015
Examination:- B. Com.

Roll No. ....

Subject: **Business Statistics & Mathematics**
PAPER: BC-301

TIME ALLOWED: 3 hrs.
MAX. MARKS: 100

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

SECTION- I

1. The following are the scores made by two batsmen A and B in a series of innings

A	28	22	46	85	9	59	175	42	11	92
B	52	18	4	95	125	12	90	58	7	79

Who is better as run getter? Who is more consistent player?

2. Find the regression line x on y and y on x.

X	125	137	156	112	107	136	123	106
Y	78	89	97	69	59	79	68	53

And show that $\Sigma (Y - \hat{Y}) = 0$

3. construct index no for 2002 from the following data taken 2000 as base using Laspeyre's, Paasche's, Fisher's and Marshall'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

4. Test for Association:

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

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

SECTION – II

5. Find the inverse of matrix

$$A = \begin{pmatrix} 4 & 10 & 0 \\ -7 & 1 & -2 \\ 6 & -5 & 6 \end{pmatrix}$$

6. (a) Half of two numbers addition is equal to 7/5 and half of two numbers subtraction is 7/12 find the numbers.

   (b) Solve the following $x^2 + 5x = 50$

7. (a) For an A.P: $a_{10} = 275$ and $a_3 = 450$. Find first term, general term and common difference of the progression.

   (b) The 54th and 4th term of an A.P are – 61 and 64 respectively. Show that the common difference is – 5/2 and 23rd term is 16.5.

8. (a) How long will it take for 1500 invested at 8% simple interest to triple in amount?

   (b) How long does it take for a money to double at 16% P.a compounded semi annually?