



# UNIVERSITY OF THE PUNJAB

PART-I: 2<sup>nd</sup> Annual – 2018

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. Find the line of regression of Y on X and X on Y from the given data also calculate correlation coefficient

x	88	92	95	72	65	88	60
y	65	70	80	60	53	72	55

2. Calculate co-efficient of skewness by Karl Pearson

Classes	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 - 89
f	13	31	49	78	110	102

3. Draw all possible samples of size 3 from the population 1,3,5,7,9,11 without replacement. Make sampling distribution and show that (i)  $\mu_x = \mu$  (ii)  $\sigma_x^2 = \frac{6^2}{n} \frac{N-n}{N-1}$

4. Calculate Price Index Numbers using Laspeyre's, Paasche's, Fisher's and Marshall's formulae for 2003 taking 2002 as base.

Years	A		B		C			
	Price	Quantity	price	Quantity	Price	Quantity		
2002	2	20	4	4	1	10		
2003	5	15	8	5	2	12		

### SECTION - II

5. (a) The sum of three consecutive even integer is 132. What are integers?

(b) Solve by quadratic formula.  $x = 4 - 2x^2$ .

6. (a) Find inverse  $A = \begin{pmatrix} 70 & 30 \\ 12 & 40 \end{pmatrix}$

(b) Determine the values of a and b if  $|A| = 2$  and  $|B| = 8$

Where  $A = \begin{pmatrix} a & 3 \\ 2b & 4 \end{pmatrix}$  and  $B = \begin{pmatrix} 3 & -b \\ 2 & a \end{pmatrix}$

7. (a) Find the total compound interest that has to be paid after 3 years on the original principal of 16,000 at yearly rate of 11%.

(b) Find the amount of which Rs. 20,000 will grow if interest at 12% P.A compounded quarterly for 5 - years.

8. The common ratio and sum of a G.P are 2 and 765 respectively. Find first term, if number of terms are eight.