

University of the Punjab
Part I 2018 2nd Annual Examination ADC/BCOM
Subject: Business Statistics & Mathematics
Paper: BC: 301

Time Allowed: 3 Hours Maximum Marks: 100

Composed by Iftikhar Ali Lecturer Statistics, Finance & Accounting

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

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Section I

Q.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

Q.2: Calculate Co-efficient of Skewness by Karl Pearson Method:

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

Q.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) $\mu_{\bar{x}} = \mu$
- (ii) $\sigma_{\bar{x}}^2 = \frac{\sigma^2}{n} \left[\frac{N-n}{N-1} \right]$

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

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

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Section II

Q.5:

- (a) The sum of three consecutive even integer is 132. What are integers?
 (b) Solve by quadratic formula: $x = 4 - 2x^2$

Q.6: Find inverse $A = \begin{bmatrix} 70 & 30 \\ 12 & 40 \end{bmatrix}$

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

$$A = \begin{bmatrix} a & 3 \\ 2b & 4 \end{bmatrix} \text{ \& } B = \begin{bmatrix} 3 & -b \\ 2 & a \end{bmatrix}$$

Q.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 72% P.A compounded quarterly for 5 - years.

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

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