Question Paper 2016

Time : 3 Hours   Marks: 100

Note: Attempt any five questions. All questions carry equal marks. Attempt at least two Questions from each section.

SECTION -I

Question No.1
From the following frequency distribution find Median, Mode and Coefficient of skewness

Weekly Earnings (In Rs.)	No. of Workers
0-50	3
50-100	7
100-150	12
150-200	18
200-250	21
250-300	22

Question No.2
The price and quantities of four commodities in years 2005 and 2012:

Years	A		B		C		D	
	Price	Qty.	Price	Qty.	Price	Qty.	Price	Qty.
2005	17.00	135	19.36	214	15.18	191	99.32	161
2012	27.52	369	29.59	247	14.46	227	96.17	186

Compute Laspeyre's , Paasche's Marshall's and Fisher's index number of prices for 2012

Question No.3

From the following data calculate co-efficient of correlation, regression line Y and X and also comment on answer:

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

Question No.4

A population consists of five members 8, 12, 16, 18 and 20. Take all the possible samples of size 2, without replacement from this population. Find the mean of all samples from sampling

distribution of these means. Calculate:

    (i)   The mean and standard deviation of the population.

    (ii)   The mean and standard error of the sampling distribution of X

    (iii)   Verify $\mu_{\bar{X}} = \mu$ and $\sigma_{\bar{X}} = \frac{\sigma^2}{n} \cdot \frac{N-n}{N-1}$

SECTION – II

Question No. 5

    (a) Find the sum of infinite Geometric series $5 + 5/6 + 5/36 + \ldots \infty$

    (b) Which term of the sequence 16, 8,4,2,…… is 1/16 ?

Question No.6

    (a) $\sqrt{5x + 4y} - \sqrt{3x + 1} = 1$

    (b) Solve for x and y:

            5x+4y = 7

            3x - 4y = 17

Question No. 7

If A $= \begin{pmatrix} 1 & -2 & 3 \\ 4 & -5 & -6 \\ 7 & 8 & 9 \end{pmatrix}$

Then obtain A^{-1}

Question No. 8

What semi-annual payment is required to pay off a loan of Rs. 800,000 in ten years if interest is 16% compounded semi-annually?