# **Question Paper 2012**

### Time: 3 Hours Marks: 100

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

# **SECTION 1**

### **Question No.1**

The mid-values of a frequency distribution are given as:

Mid Valu	e 115	125	135	145	155	165	175	185	195
Frequenc	<b>y</b> 6	25	48	72	116	60	38	22	2
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Calculate									
(i)	A.M								
(ii)	Mode								
(iii)	iii) Coefficient of Skewness								

### **Calculate:**

- (i) A.M
- (ii) Mode
- Coefficient of Skewness (iii)

### **Question No.2**

(a) The number of units produced by a process (x) and the cost of producing unit (y) were made as:

### Find:

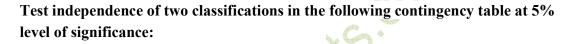
- (i) The coefficient of correlation
- (ii) The regression equation of y on x

(b) Construct index number of Prices with the help of following data by:

- (i) Laspeyr's
- (ii) Paasche's
- (iii) Fisher's
- (iv) Marshall Edge worth Formula

Commodity	Base	Year	Current Year		
Commodity	Quantity	Price	Quantity	Price	
Α	150	6	140	8	
В	180	10	160	12	
С	110	16	80	20	
D	120	20	100	24	

Question No. 3



Attributes	A1	A2	A3	A4
B1	42	72	72	72
B2	33	62	82	64
B3	37	121	93	90

(The table value of Chi-Square is 12 59)

# Question No. 4

A population consists of five values 2, 4, 6, 8, 10. Take all possible samples of size n = 2 from this population without replacement.

## Find:

- (i) Mean and Variance for population
- (ii) Mean and unbiased Variance of each sample.
- (iii) Average of the means of all samples and average of the variances of all samples.

# **SECTION 2**

Question No. 5  
If A = 
$$\begin{pmatrix} 0 & 1 & 3 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{pmatrix}$$
 Then obtain A<sup>-1</sup>, (Inverse of A)

Question No. 6 (a) Solve for X the equation:  $x=(\sqrt{x+3}) - 3$ 

## (b) Solve the following system of equations:

9x + 15y = 12315x + 93y = 201

## Question No. 7

(a) Show that the sum of geometric series of 6 terms;

1/3, -1/9, 1/27, -1/81 ..... is 182/729

(b)The first term, of an AP is 5, the last term 45 and the sum 400. Find number of terms and common difference in the series.

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## Question No. 8

Mohsin had it note tor Rs. 1.5000 with an interest rate of 6%. The note an, dated January 12, 2003 and maturity date was 90 days after date On January 27, 2003, he took the note to his bank, loch discounted it at a discount rate of 7%.

How much .did he receive? (Take 360 days in the year)