2017

Time : 3 hours

Full Marks : 100

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

*Answer any **five** questions.*

1. From the following frequency distribution find out $Q_1 : Q_3 : P_{40}$ and D_6 :

Class	Frequency
10 – 14	5
15 – 19	10
20 – 24	15
25 – 29	20
30 – 34	10
35 – 39	5

2. Calculate mean deviation about the mean for the following data :

Class	Frequency
0 – 10	6
10 – 20	5
20 – 30	8
30 – 40	15
40 – 50	7
50 – 60	6
60 – 70	3

3. The mean and standard deviation of two brands of light bulbs are given below :

	Brand I	Brand II
Mean	800 Hours	770 Hours
Standard Deviation	100 Hours	60 Hours

Calculate a measure of relative dispersion for the two brands and interpret the result.

4. Calculate Karl Pearson's coefficient of skewness from the following data taking mode by observation method :

Size	Frequency
1	10
2	18
3	30
4	25
5	12
6	3
7	2

5. Ten competitors in a beauty contest are ranked by two judges in the following order :

I Judge	II Judge
1	6
6	4
5	9
10	8
3	1
2	2
4	3
9	10
7	5
8	7

Calculate the Spearman's Rank correlation coefficient. Is there an association between the ranking ?

6. From the following data calculate price index number for 2016 with 2006 as base by (i) Laspeyre's method, (ii) Passache's method and (iii) Fisher's Ideal method :

Commodity	2006		2016	
	Price	Quantity	Price	Quantity
A	20	8	40	6
B	50	10	60	5
C	40	15	50	15
D	20	20	20	25

7. Calculate 3 Yearly moving averages of the production figures given below :

Year	Yield
2001	15
2002	21
2003	30
2004	36
2005	42

Year	Yield
2006	46
2007	50
2008	56
2009	63
2010	70
2011	74

8. An Urn contains 7 white, 5 black and 3 red balls. Two balls are drawn at random. Find the probability that :

   (a) Both the balls are red.

   (b) Obe ball is red and the other is black.

   (c) One ball is white.

9. What are the different methods of calculating averages ? Explain the salient features of them.

10. What is Regression equation ? Explain the utility of calculating Regression equation.