



M 3830

Reg. No. : .....

Name : .....

II Semester B.A./B.Sc./B.Com./B.B.A./B.B.A.T.T.M./B.B.M./B.C.A./B.S.W.  
Degree (CCSS – Reg./Supple./Improv.) Examination, May 2013  
CORE COURSE IN STATISTICS  
2B02 STA : Descriptive Statistics

Time: 3 Hours

Max. Weightage : 30

**Instruction : Use of calculators and tables are permitted.**

PART – A

Answer **any 10** questions :

(Weightage 1)

1. State the desirable properties of a good average.
2. Write down the equation of a second degree parabola and the associated normal equation.
3. Define Quartile deviation and explain the notations used.
4. Give the formula for finding Rank correlation coefficient and its modification if there are repeated ranks.
5. What is the need for two regression lines ?
6. What do you mean by cyclical variation and seasonal variation in time series data ?
7. What is meant by cost of living Index number ? Give its uses.
8. Explain the graphical or free hand method of finding a trend.
9. Give the formula of Fisher's Ideal Index number. Why is it called an ideal index number ?
10. Describe time reversal test.
11. Index numbers are Economic Barometers. Explain. (10×1=10)

P.T.O.



## PART – B

Answer any 6 questions :

(Weightage : 2)

12. Show that sum of deviations of observations from the A.M. is zero.
13. Fit a curve of the form  $y = ab^x$ .
14. Two regression lines are given  $4y - 5x = 0$  and  $5y - x - 63 = 0$ . Calculate  $\bar{y}$ ,  $\bar{x}$  and  $r_{xy}$ .
15. What is the relationship between Laspeyre's, Pasche's and Fisher's index number. Illustrate.
16. What are raw and central moments ? Find an expression for the second central moment interms of raw moments. What is its significance ?
17. What is trend in time series data ? Explain the method of Least Squares for finding Trend.
18. Explain the ratio to trend and ratio to moving average method for measuring seasonal variation.
19. What is Lorenz curve ? Give a brief note of its utility.
20. The correlation coefficient between two variables X and Y is 0.56. The covariance is 36 and variance of Y is 25. Find the S.D. of X. (6×2=12)

## PART – C

Answer any 2 questions :

(Weightage 4)

21. Two cricketers A + B scored the following runs in 10 innings. Find who is a better player and who is a consistent player.

**A :**     42    17    83    59    72    76    64    45    40    32

**B :**     28    70    31    0    59    108    82    14    30    95

22. Find the Rank correlation coefficient for the following data :

**Roll No.**                    : 1    2    3    4    5    6    7    8    9    10

**Marks in Mathematics :** 20   25   60   45   80   25   55   65   25   75

**Marks in Statistics :** 25   50   55   50   60   70   72   78   80   63



23. Draw a trend line by the method of semi-averages for the following data and compare by plotting the actual data on the same graph.

<b>Year</b>	:	1990	91	92	93	94	95	96
<b>Production</b>	:	100	120	95	105	108	102	112

24. Calculate Fisher's ideal index number and show that it satisfies time reversal and factor reversal test.

Item	Price		Quantity	
	1996	1997	1996	1997
	8	20	50	60
	2	6	15	10
	1	2	20	25
	2	5	10	8
	1	5	40	30

(2x4=8)