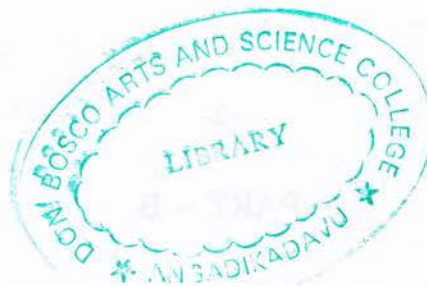


M 8903



Reg. No. :

Name :



**First Semester B.Sc. (Regu./Supple./Improvement) Degree
Examination, November 2010
STATISTICS (Complementary)
IC01STA Basic Statistics (Course No. – 1)**

Time : 3 Hours

Total Weightage : 30

Instruction : Use of calculator and statistical tables permitted.

PART – A

Answer **any 10** questions :

(Weightage 1 each)

1. What are sampling and non-sampling errors ?
2. What is stratified sampling ?
3. Give the formula for weighted arithmetic mean. Explain with an example.
4. Define and give the use of co-efficient of variation.
5. Write down the equation to a straight line and give its normal equation to fitting it.
6. Give the formula of Spearman's rank correlation. When is it used ?
7. Draw the Lorenze curve and explain its uses.
8. What is the need for two regression lines ?
9. Explain time reversal test in relation to Fisher's ideal Index number.
10. Give the expression for Paasche's weighted index number explaining the notations.
11. Express partial correlation coefficient $r_{13.2}$ in terms of simple correlation co-efficient.

P.T.O.



PART - B

Answer any 6 questions :

Weightage 2 each

12. What is census and sampling ? Give their relative advantages and disadvantages.
13. A man travels round a square stadium. The first side at 40 Km/hr., second side at 45 Km/hr, third side at 38 km/hr and fourth side at 37 Km/hr. Find the average speed.
14. Show that the square of the correlation co-efficient is the square of the geometric mean of the regression coefficients.
15. What are mesokurtic, leptokurtic and platykurtic curves ?
16. Find out the normal equations for fitting a 2nd degree parabola.
17. Show that the correlation coefficient lies between -1 and $+1$.
18. Derive the expression for the r^{th} central moment in terms of raw moments. Also find μ_2 .
19. Given $\sigma_x = 9$ and the two regression equations $8x - 10y + 660$ and $40x - 18y = 214$. Find \bar{X} , \bar{Y} , γ_{xy} and σ_y .
20. Find the Fisher's ideal index number for the following data.

Year	Wheat		Rice		Pulses	
	Price	Quantity	Price	Quantity	Price	Quantity
1959	15.3	15	20.2	5	4	10
1968	22.3	12	27.4	4	7	8



PART – C

Answer any two questions :

Weightage 4 each

21. From the following data obtain the line of regression of y on x and find the value of y, when $x = 8$ and $x = 16$. Also find the correlation coefficient.

x : 2 6 8 11 13 13 13 14

y : 8 6 10 12 12 14 14 20

22. a) Why are index numbers called economic barometers ?

b) What is time series analysis ? Explain its various components.

23. Fit a second degree parabola to the following data

X: 1951 1952 1953 1954 1955 1956 1957 1958 1959

Y: 4 8 9 12 11 14 16 17 26

24. Write short notes on the following :

a) Primary and secondary data

b) Weighted average

c) Lorenz curve

d) Partial and multiple correlation.
