Reg. No. : ....

Name : ....

I 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./ B.A. Afsal-Ul-Ulama Degree (CCSS-Regular/Supple./Improvement) Examination, November 2013
COMPLEMENTARY COURSE IN STATISTICS FOR MATHS/COMPUTER SCIENCE CORE
1C01 STA : Basic Statistics

Time : 3 Hours   Max. Weightage : 30

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

PART – A

Answer **any 10** questions.   **(Weightage 1)**

1. Distinguish between population and sample.

2. What is meant by systematic random sampling ?

3. What are the desirable properties of a good average ?

4. Define coefficient of variation.

5. State the formula for Karl Pearson's coefficient of skewness.

6. What is meant by kurtosis of a distribution ?

7. What do you mean by quartiles ?

8. Distinguish between positive and negative correlation.

9. What is a regression line ?

10. Define Paasche's index number.

11. What are the components of a time series ?   **(10×1=10)**

PART – B

Answer **any 6** questions.   **(Weightage 2)**

12. Distinguish between primary and secondary data. What precautions are necessary before making use of secondary data ?

13. Explain the method of selecting a stratified random sample. What are the advantages of this method ?

14. The arithmetic mean and standard deviation of a series of 10 items were calculated as 20 and 5 respectively. But while calculating them an item '13' was misread as '30'. Find the correct mean and correct standard deviation.

15. The first four moments of a distribution about the value 5 of a variable are 2, 20, 40 and 50. Obtain the mean, second, third and fourth order central moments.

16. In a frequency distribution the coefficient of skewness based on quartiles is 0.6. If the sum of the upper and lower quartiles is 100 and the median is 38, find the values of the quartiles.

17. Fit a straight line to the following data.

X :   1   3   4   5   7
Y :   2   4   8   12   14

18. Calculate Spearman's rank correlation for the following data.

Ranks in X :   1   2   3   4   5   6   7   8   9   10
Ranks in Y :   3   4   1   2   5   8   9   10   7   6

19. The two regression lines are given by $x + 2y - 5 = 0$ and $2x + 3y - 8 = 0$. Determine the means of X and Y. If variance of X is 12 determine variance of Y and the correlation coefficient.

20. From the following data calculate Fisher's index number for the year 2010.

Commodity	Base year 2000		Current year 2010	
	Price	Quantity	Price	Quantity
A	8	5	24	6
B	5	3	20	4
C	3	12	10	14

(6×2=12)

PART – C

Answer **any 2** questions.

(Weightage 4)

21. Prices of a particular commodity in five months at two regions are as follows.

    Region A : Rs. 18   12   10   20   15
    Region B : Rs. 20   22   19   22   23

    Compare the consistency of prices in the two regions.

22. Why there are two regression lines ? From the following data, obtain the two regression equations. Estimate the value of Y when X = 12.

    X :   2   3   7   8   10
    Y : 10   9 11   8   12

23. Explain various tests that an ideal index number should satisfy. Examine whether these tests are satisfied by Fisher's ideal index number.

24. Below are given the figures of production (in thousand quintals) of a sugar factory.

    Year :   1995 1996 1997 1998 1999 2000 2001
    Production :   77   88   94   85   91   98   90

    Fit a straight line trend by the least square method and tabulate the trend values.

    (2×4=8)