

**Mathabhanga College**  
**Class Test-2019**  
**Semester-2nd**  
**Economics-Honours**

**CC-4**

Time -one hour

Marks -25

**Group-A**

**Answer any two**

**10X2=20**

1. b) Show that the value of correlation coefficient 'r' lies between -1 and +1.
- b) Prove that the Standard Deviation calculated from two values  $x_1$  and  $x_2$  of a variable x is equal to half of their difference. **6+4=10**
2. a) Find the mean and the S.D of the first n natural numbers.  
b) Show that S.D does not depend on change of origin but depends on change of scale. **5 + 5**
3. a) If three uncorrelated variables  $X_1, X_2$  and  $X_3$  have the same SD ,then find the coefficient of correlation between  $(X_1 + X_2)$  and  $(X_2 + X_3)$ .
- b) If two variables are independent, then their correlation coefficient will be zero, but zero correlation does not imply the independency between variables—Explain. **6+4**

**Group-B**

**4. Answer the following questions.**

**1X5=5**

- a) What should be the relation among mean, median and mode in a negatively skewed distribution.
- b) If the mean and median of a frequency distribution are 20 and 17 respectively then find the mode.
- c) What is scatter diagram?
- d) How is SD affected if all the variate values are changed by the same amount.
- e) What do you mean by Kurtosis ?