

**Khudiram Bose Central College**  
**Final Examination - 2020**  
**Sem-III**  
**Business Mathematics & Statistics [H & G]**  
**Total Marks – 25**

**Group – A**

**Answer any two [2 ½ X 2 = 5]:**

1. Find the Co-relation Co-efficient of

X	1	3	5	6	7
y	4	2	1	3	5

2. If  $\sum D^2 = 33$  and  $n = 10$ . Find Rank Co-relation.  
 3. Find the Regression Equation if y on x when  $\bar{x} = 20, \bar{y} = 25, b_{yx} = 0.48$ .  
 4. If  $r = 0.6$ ,  $\text{Cov}(x,y) = 12$ , and  $\sigma_x = 5$ , Find  $\sigma_y$ .

**Group – B**

**[Any Four - 4X 5 = 20]**

5. Find the Co-relation co-efficient:

X	10	6	9	10	12	13	11	9
y	9	4	6	9	11	13	8	4

6. Find Rank Co-relation

X	50	88	90	55	64	34	25	44
y	34	72	85	44	70	30	28	38

7. Find a Linear Regression Equation of y on x

X	1	2	3	4	5
y	3	2	5	4	6

8. Find the Cost of Living Index Number

Class Index	Food	Dress	Rent	Fuel	Sugar
	620	575	325	255	280
Weight	30	20	25	15	10

9. Find Five yearly Moving Average

Year	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
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Student	332	317	357	392	402	405	410	427	405	431
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10. If  $\frac{\log x}{y-z} = \frac{\log y}{z-x} = \frac{\log z}{x-y}$  then prove  $x^x \cdot y^y \cdot z^z = 1$ .

11. Is there any term free from  $x$  of  $(x - \frac{3}{x})^7$ ?

12. Fit Straight Line Trend Equation by Least Square Method:

Year	1971	1972	1973	1974	1975	1976	1977
Production	40	45	46	42	47	50	46