R. J. Tibrewal Commerce College, Vastrapur, Ahmedabad.

Department of Statistics

CE 201 B ADVANCED STATISTICS-III (Principal)

Semester – 3 **(Year – 2020-21)**

Assignment 1:

Q.1 Explain Principle of Mathematical Induction. Prove by the method of induction

$$1^3 + 2^3 + 3^3 + ... + n^3 = \frac{n^2(n+1)^2}{4}$$

Q.2 Find the term independent of x in the expansion of $\left(\frac{2x^2}{5} - \frac{5}{2x}\right)^9$

Assignment 2:

Q.1 For a trivariate distribution, $\sigma_1 = 18,\ \sigma_2 = 17,\ \sigma_3 = 19,$ $r_{12} = 0.3, r_{13} = 0.5, r_{23} = 0.4$

Find (i) $b_{12.3}$ **and (ii)** $r_{31.2}$ **(iii)** $R_{2.13}$**.**

Q.2

From the following data, obtain regression line of x_2 *on* x_1 *and* x_3**.**

$\bar{x}_1 = 50,\ \bar{x}_2 = 140,\ \bar{x}_3 = 210,\ r_{12} = 0.75, r_{13} = 0.67, r_{32} = 0.56,$

$s_1 = 24, s_2 = 25, s_3 = 30$