Introduction to Statistical Methods
(S1-21_DSECLZC413)
Assignment - 2

Each question carries 2.5 Marks (2.5 x 4 = 10 Marks)

Duration: 26th–Feb,2022 – 13th- March,2022

- **Submissions are individual**
- **Solve these on paper, scan, make pdf and upload**
- **Plagiarism results in zero marks**
- **Write your name, BITS ID and Section on each page**

1. New born babies are more likely to be boys than girls. A random sample found 13,173 boys were born among 25,468 new born children. The sample proportion of boys was 0.5172. Is this sample evidence that the birth of boys is more common than the birth of girls in the entire population?
2. A random sample of 10 boys had the following I.Q's : 70, 120 ,110, 101,88, 83,95,98,107 and 100.

   a) Do these data support the assumption of a population mean I.Q of 100?

   b) Find a reasonable range in which most of the mean I.Q values of samples of 10 boys lie.

3. The joint probability distribution of X on Y is

X \ Y	-1	1
0	$\frac{3}{8}$	$\frac{1}{8}$
1	$\frac{1}{8}$	$\frac{3}{8}$

   Find the correlation coefficient between X and Y.

4. The two regression lines between x and y are $8X - 10Y + 66 = 0$, $40X - 18Y - 214 = 0$ and variance of X is 9
   a. Find $\bar{x}, \bar{y}$ and correlation coefficient(r).
   b. The standard deviation of Y