Advanced Statistical Methods
BDA2221
Assingment 1

Date: 20.04.2022   **Due on: 27.04.2022**

Solve the following problems. Show your work. Submit your assingments in groups of upto three.

1. Let $A_1, A_2, \ldots, A_n \subset A$ Explain the concept of mutually exclusive and collectively exhaustive for this situation.   (1)

2. Prove the following theorem:
   The MSE of $\hat{\theta} \in \Theta \in \mathbb{R}$ can be expressed as

$$MSE(\hat{\theta}) = var(\hat{\theta}) + (bias(\hat{\theta})^2$$

(1)

3. Show that we cannot find the best estimator using MSE criteria.   (1)