Sylhet Cadet College
Model Test Examination - 2022
Class: HSC
Subject: Statistics 2nd Paper (Creative)
Time: 1 hour & 40 minutes   **Subject Code: 129**   **Full Marks: 30**

Answer three questions taking at least 1 (one) from each group. Figures in the right indicate full marks.

Group A

1. **A red and a blue dice are thrown once. The dice are absolutely neutral and independent.**

   (a) What is a simple event?   1

   (b) Give an example of a certain event using set theory.   2

   (c) Find the probability that the difference of two digits from two dices is less than 3.   3

   (d) Are the probabilities of getting greater digit from the blue die and that from the red die equal? Justify.   4

2. **A coin is tossed five times. The number of heads appearing from the tosses is considered a discrete random random variable.**

   (a) What is a discrete random variable?   1

   (b) Are probability distributions and frequency distributions similar? Show with an example. 2

   (c) Find the probability distribution from the stem and show in a table.   3

   (d) Find the probability of number of heads appearing in more than 3 tosses.   4

3. **A professor showed a probability distribution in a class:**

x	1	2	3	4	5
p(x)	0.1	a	0.3	b	0.2

The value of the arithmetic mean of the distribution is 3.

   (a) What is the formula of expectation?   1

   (b) What is the variance of a constant? Explain logically.   2

   (c) What are the values of a & b?   3

   (d) Find and explain the variance of the distribution.   4