

Pabna Cadet College
Fortnightly Examination - 2021
Third Term Phase One
Subject: Statistics
Class: XII

Time: 40 minutes

Full Marks: 20

Answer all the questions.

1. $A = 1, 3, 5$ and $B = 1, 3, 4, 6$; Are A and B independent? 3
2. What are the conditions of axiomatic probability? 3
3. What is the probability that there are 53 Fridays in a leap year? 2
4. What is the size of a sample space generated from tossing a coin 5 times? 1
5. Draw the probability tree for an experiment involving tossing a coin and a die. 1
6. It is found from a survey that 40% people read The Washington Post, 50% read The New York Times, and 20% read both.
 - a. Define event in the field of probability theory. 1
 - b. If two events A and B are independent, $A \cup B = ?$ 2
 - c. From the stem, find the probability that a randomly selected person reads at least one newspaper. 3
 - d. Is the equation $X + Y - 0.3 = 0$ correct, where X is probability of reading only The Washington Post and Y is probability of reading only The New York Times. Prove mathematically. 4

—Good Luck—