

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

Time: 25 minutes

Full Marks: 10

Answer all the questions.

1. The probability density function of  $x$  is given below

$$f(x) = \begin{cases} \frac{3}{4}(x^2 + 1), & 0 \leq x \leq 1 \\ 0, & \text{otherwise} \end{cases}$$

- a. In a probability density function (pdf), what is the probability of a single value?
- b. Verify whether the given function is a probability density function.
- c. Find  $P(0 \leq X \leq 0.6)$
- d. Find the first quartile of the pdf.

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