TUTORIAL - 1

UNIT-1 (RANDOM VARIABLES)   Max.Marks: 20.

①.   A random Variable X has the following probability distribution

X:	-2	-1	0	1	2	3
P(x) :	0.1	k	0.2	2k	0.3	3k

(i) Find k   (ii) Find $P(X<2)$, $P(|X|<2)$ and

(iii) CDF of X.

②.   The Pdf of a random Variable X is given by

$f(x) = \dfrac{x}{8}$, $3 < x < 5$. Find $P(X<4)$, $P(x>3.5)$

and $P(4 < X < 5)$.

③.   If X is a discrete random Variable with pmf

$P(x) = \dfrac{1}{k^x}$, $x = 1, 2, 3, \ldots\ldots$ Find its MGF and hence

Find the first and Second moment about origin.

④.   A random Variable X has a density function given

by $f(n) = \begin{cases} 2e^{-2x}, & x \geqslant 0 \\ 0, & \text{otherwise} \end{cases}$ Obtain the MGF of X

and hence the first three moments about mean.

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