	Parul University **Faculty of Engineering and Technology** **Parul Institute of Engineering and Technology** **Department: AI-ML/AI-RO/AI/AI-DS/CSE/MICRO/SAP/QUICK/ORACLE/IT/AERO**

Subject Name	**PROBABILITY, STATISTICS AND NUMERICAL METHODS**	**A.Y**	**2025/2026**
Subject Code	**303191251**	**Semester**	**4^{th}**

Chapter-2

Sr No	Question	COs	B.T
1	A coin is tossed 3 times. Find probability of getting exactly 2 heads.	2	2
2	Use Bayes theorem: A has 60% success, B has 40%. If overall success happened, find P(from A).	2	4
3	A bag has 5 red, 3 blue, 2 green balls. One is drawn. Find P(red or green).	2	2
4	For a discrete RV X with P=(0.2,0.3,0.4,0.1) find mean & variance.	2	3
5	If X ~ Bin(15,0.4), find P(X=5).	2	3
6	If a Poisson distribution has mean 3, find P(X≤1).	2	3
7	A continuous RV has PDF $f(x)=k(1-x^2)$ on $-1<x<1$. Find k.	2	4
8	Find P(50<X<70) when X ~ Normal (μ=60, σ=10).	2	4
9	Distinguish Binomial, Poisson and Normal distributions with examples.	2	2
10	If X and Y are independent, show E(XY)=E(X)E(Y).	2	5