National University of Computer and Emerging Sciences, Lahore Campus

	Course:	Probability and Statistics	Course Code:	MT2005
	Program:	BS(Computer Science)	Semester:	Sping-2025
	Duration:	15 Minutes	Total Marks:	10
	Quiz Date:	24-03-25	Weight	3%
	Section:	BCS-4F	Page(s):	1
	Exam:	Quiz-2	Roll No:	
Instruction/Notes:		**Attempt All Questions/Parts**		

QUESTION 1: (10)   (Marks=5+1+1+3)

A survey showed that 8% of Internet users age 18 and older report keeping a blog. Referring to the 18–29 age group as young adults, the survey showed that for bloggers 54% are young adults and for nonbloggers 24% are young adults (Pew Internet & American Life Project, July 19, 2006).

a.   Develop a joint probability table for these data with two rows (bloggers vs. non-bloggers) and two columns (young adults vs. older adults).
b.   What is the probability that an Internet user is a young adult?
c.   What is the probability that an Internet user keeps a blog and is a young adult?
d.   Suppose that in a follow-up phone survey we contact someone who is 24 years old. What is the probability that this person keeps a blog?

a- **Sol:**

01 for each
for sell
for Eight cross tab
Total   as per required
rows & col.

	18-29 Younger Adults	729 Older Adults	
Bloggers	54% Of 8% (0.0432) ✓	46% of 8% (0.0368)	8% (0.08)
Non-Bloggers	24% of 92% (0.2208) ✓	76% of 92% (0.6992) ✓	92% (0.92)
	0.2640	0.7360	100% (1)

b-   0.2640 (1)

c-   0.0432 (1)

d- $P\left(\dfrac{B}{YA}\right)$ (1) $\longrightarrow \dfrac{P(B \cap YA)}{P(YA)} = \dfrac{0.0432}{0.2640}$ (1) $= \boxed{0.1636}$ (1)

YA: Young Adult of 24 years old