National University of Computer and Emerging Sciences, Lahore Campus

Course:	AI	Course Code:	CS401
Program:	BS(Computer Science)	Semester:	Spring 2017
Duration:	10 Min	Total Marks:	5
Paper Date:	27-04-17	Weight	%
Section:	E	Page(s):	
Exam:	Quiz 5	Reg. No	

Instruction/Notes:

Question1 (5)

Given the following training text data. Consider unigram features.

Document #	Words	Class
1	computer vision intelligence computer science	c1
2	network protocols transmission	c2
3	robotic arm prosthetics	c3
4	machine learning data mining computer vision	c1

Classify the following instance.

document#	words	class
5	computer computer transmission problem	?

Solution.

V= 14

P(c1| D5) P(D5| c1)* P(C1)= (3+1)/(10+14) * (3+1)/(10+14) * (0+1)/(10+14) *(0+1)/(10+14) * 2/4 =2.41E-5

P(c2| D5) P(D5| c2)* P(C2)= (0+1)/(3+14) * (0+1)/(3+14) * (1+1)/(3+14) *(0+1)/(3+14) * 1/4 =5.98E-6

P(c3| D5) P(D5| c3)* P(C3)= (0+1)/(3+14) * (0+1)/(3+14) * (0+1)/(3+14) *(0+1)/(3+14) * 1/4 =2.99E-6

P(c1| D5) is highest therefore predicted class of D5 is c1.