National University of Computer and Emerging Sciences, Lahore Campus

Course:	Probability & Statistics	Course Code:	MT206
Program:	BSCS	Semester:	Fall-2017
Duration:	1 – Hour	Total Marks:	30
Paper Date:	Sep. 19, 2017	Weight	15
Section:	All	Page(s):	01
Exam:	Mid – 01	Roll No:	[redacted]

Instruction/Notes: Exchange of calculators and stationary is strictly prohibited. Attempt parts of same question together. If you think some information is missing or wrong make assumptions and clearly state them.

Question 1: (08 marks): The following numbers represent the composite scores for 50 students of a certain college:

93	77	67	72	52	83	66	84	59	63	68	76	85
75	97	84	73	81	42	61	51	91	87	58	45	73
34	54	71	47	79	70	65	57	90	83	75	42	93
58	69	82	6	71	60	38	81	74	69	65		

a) Organize the data into a frequency distribution using 10 as a class interval and 30 as the starting point.
b) Draw histogram also mention the shape of the distribution.
c) Construct a stem and leaf display of the data and explain how does histogram and stem and leaf differs from each other.

Question 2: (10 marks): *Goals recorded by two teams A and B in a football season were as follows:*

No. of goals scored in a match	0	1	2	3	4
No. of matches: Team A	24	9	8	5	4
No. of matches: Team B	17	9	6	5	3

By calculating the coefficient of variation in each case, find which team may be considered as more consistent.

Question 3: (04 marks): From past experiences a stockbroker believes that under present economic conditions a customer will invest in tax-free bonds with a probability of 0.5, will invest in mutual funds with a probability of 0.4, and will invest in both tax-free bonds and mutual funds with a probability of 0.15. At this time, find the probability that a customer will invest: **(a)** in either tax-free bonds or mutual funds; **(b)** in neither tax-free bonds nor mutual funds.

Question 4: (08 marks): Police plan to enforce speed limits by using radar traps at 4 different locations within the city limits. The radar traps at each of the locations R_1, R_2, R_3 and R_4 will be operated 40%, 30%, 20%, and 30% of the time, and if a person who is speeding on his way to work has probabilities of 0.3, 0.2, 0.4, and 0.1, respectively, of passing through these locations: **(a)** What is the probability that he will receive a speeding ticket? **(b)** What is the probability that he passed through the radar trap located at R_3?