NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES

Marks: 100	**ASSIGNMENT-1**	**Dead line: 10-09-24**

Subject: Probability and Statistics **All Sections**
Instructors: Hazber Samson, Rijah Khan Date: 05-09-2024

Q1. Trust in Internet Information A survey was taken on how much trust people place in the information they read on the Internet. **A** trust in everything they read, **M** trust in most of what they read, **H** trust in about one-half of what they read, **S** trust in a small portion of what they read. (Based on information from the *UCLA Internet Report.*)

M	M	M	A	H	M	S	M	H	M
S	M	M	M	M	A	M	M	A	M
M	M	H	M	M	M	H	M	H	M
A	M	M	M	H	M	M	M	M	M

(a) Construct Bar Chart and Pie Chart for each category of Trust.
(b) Construct a categorical frequency distribution for the data and interpret the results.
(c) Construct a relative categorical frequency distribution for the data and interpret the results.

Q2. The data are the salaries (in hundred thousands of dollars) of a sample of 30 colleges and university coaches in the United States. Construct a frequency distribution for the data

164	225	225	140	188
210	238	146	201	544
550	188	415	261	164
478	684	330	307	435
857	183	381	275	578
450	385	297	390	515

(a) Construct a Histogram
(b) Construct Frequency Polygon
(c) Construct Ogive for the data.

Q3. The Houston, Texas, Motel Owner Association conducted a survey regarding weekday motel rates in the area. Listed below is the room rate for business-class guests for a sample of 10 motels.

$101	$97	$103	$110	$78	$87	$101	$80	$106	$88

(a) Compute Mean, Median and Mode
(b) Compute Range, Variance and Standard Deviation
(c) If the rates are increased by $10 what will be the new Mean and Standard Deviation
(d) If the rates become double in the tourism season, what will be the new mean and S.D.
(e) If the rates are denoted by X, find $V(2X+5)$ *and* $S.D(5X-3)$

Q4. Marks of 12 students in the subject of Accounting and Finance are as follows

11, 51, 58, 61, 65, 67, 72, 73, 75, 78, 80, 97

(a) Find Quartiles and IQR and interpret the results
(b) Compute D_5 *and* P_{43} and interpret the results
(c) Identify outliers if any
(d) Construct Box and Whisker Plot.
(e) Discuss about skewness in view of Box Plot.

Q5. Consider marks of 15 students in two courses Calculus and Linear Algebra

Marks in Calculus: 52, 58, 59, 60, 60, 62, 65, 67, 68, 70, 71, 75, 78, 80, 96

Marks in Linear Algebra: 51, 63, 65, 70, 71, 72, 75, 76, 78, 85, 87, 88, 90, 91, 97

(a) Calculate the coefficient of variation of for both data sets and comment which data set has larger relative variation
(b) Draw box and whisker diagram for both subjects in one diagram, comment about the performance of students.