ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD
(Department of Mathematics & Statistics)

WARNING

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Course: Statistics for Management (1430) **Semester: Spring, 2014**
Level: Graduation **Total Marks: 100**
Pass Marks: 40

ASSIGNMENT No. 1

Q.1 a) Define Statistics as a discipline of science. Define and explain the methods of collecting primary and secondary data. (10)

b) The following figures give the number of children born to 80 women. Form a frequency distribution with class interval one. (10)

1	2	1	4	7	8	2	1	4	2	6	4	8	2	4	7	7	4	1	7
1	4	5	7	8	8	6	7	6	6	4	9	8	10	3	1	6	8	6	7
9	4	10	5	6	9	4	6	10	5	6	2	3	9	6	5	5	4	7	8
5	3	7	5	10	6	7	7	5	6	0	6	2	3	6	7	4	1	8	2

Q.2 a) What are frequency Polygon & Histogram. How do we draw these? (10)
b) Construct a histogram for the following frequency distribution. (10)

Classes	09-11	12-14	15-19	20-29	30-34	35-39	40-44
Frequency	6	15	25	60	30	20	15

Q.3 a) Explain various methods of measuring the central tendency of a data set. Discuss advantages and disadvantages of each method. (10)
b) The following table shows the number of boys in 100 families each of 5 children. Calculate and interpret the mean, median and mode. (10)

Number of boys	0	1	2	3	4	5
Number of families	6	29	31	19	10	5

Q.4 a) Write short note on dispersion and relative measures of dispersion? Explain each of them with formulas and example. (10)

b) For the following data, compute (10)

i) Range

ii) Interfractile range between the 20^{th} and 80^{th} percentile

iii) Mean Deviation.

2,549	3,897	3,661	2,697	2,200	3,812	2,228	3,891
2,668	2,268	3,692	2,145	2,653	3,249	2,841	3,469
3,268	2,598	3,842	3,362				

Q.5 a) Explain the coefficient of variation and its practical importance. (10)

b) Calculate the variance, standard deviation and coefficient of variation for the given data: (10)

Classes	110-119	120-129	130-139	140-149	150-159
f	10	15	25	30	35

ASSIGNMENT No. 2

Total Marks: 100 **Pass Marks: 40**

Q.1 a) Explain the term hypothesis testing, level of significance, test Statistics, type-I and type-II errors. (10)

b) The marks of students in Statistics are normally distributed with mean 70 and variance 25. A sample of size 15 of new class year gave the average of 76. Test the hypothesis that this year's class is typical against the alternative that they are not typical. (10)

Q.2 a) Explain the difference between one sided and two sided test? When should each be used? (10)

b) In a random sample 800 adults from the population of a large city, 600 are found to be smokers. In a random sample of 1,000 adults from another large city, 700 are smokers. Do the data indicate that the cities are significantly different with respect to the prevalence of smoking among men? (10)

Q.3 a) Explain the procedure for testing a hypothesis about the equality of proportions of two populations i.e., H_0 ; $P_1 = P_2$ (10)

b) A machine puts out 484 perfect articles in a sample of 500. After the machine is overhauled, it puts out 97 perfect articles in a batch of 100. Has the machine efficiency been improved? (10)

Q.4 a) Compute and interpret the sample linear regression coefficients for the following data taking supply as dependent variable. (10)

Supply	400	200	700	100	500	300	600
Demand	50	60	50	70	40	30	10

b) Test the regression coefficients using a suitable test. (10)

Q.5 a) Explain the following terms in detail: (10)

i) Index Number ii) Laspeyres Price Index

iii) Paasches Price Index iv) Quantity and Value indices

b) Calculate price index numbers for 2005 taking 2000 as base year and base year values as weight by: (10)

i) weighted aggregative method

ii) weighted average of relative method

Commodities	**Quantities**		**Values**	
	2000	2005	2000	2005
A	10	15	60	120
B	8	10	40	70
C	6	7.2	18	43.2
D	3	3.3	45	36.3