ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD
(Department of Statistics)

WARNING

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENT(S) BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

Course: Statistics for Management (5412) **Semester: Autumn, 2025**
Level: BS Accounting & Finance

Please read the following instructions for writing your assignments. (AD, BS, B. Ed. MA/MSc, MEd) (ODL Mode).

1. All questions are compulsory and carry equal marks, but within a question, the marks may be distributed according to its requirements.
2. Read the question carefully and then answer it according to the requirements of the question.
3. Avoid irrelevant discussion/information and reproducing from books, study guides, or allied material.
4. Handwritten scanned assignments are not acceptable.
5. Upload your typed (in Word or PDF format) assignments on or before the due date.
6. Your own analysis and synthesis will be appreciated.
7. Late assignments can't be uploaded to the LMS.
8. The students who attempt their assignments in Urdu/Arabic may upload a scanned copy of their handwritten assignments (in PDF format) on the University LMS. The size of the file should not exceed 5MP.

Total Marks: 100 **Pass Marks: 50**

ASSIGNMENT No. 1

Q. 1: a) What do you mean by measurement scales? Explain its types with examples.
b) Explain the main characteristics of statistics. (10+10)

Q. 2: a) Describe the steps you would take to construct a frequency distribution.
b) Tabulate the following marks in a grouped frequency distribution.

74	49	103	95	90	118	52	88	101	96	72	56
64	110	97	59	62	96	82	65	85	105	116	91
83	99	52	76	84	89	11	104	96	84	62	58
66	100	80	54								

(10+10)

Q. 3: a) Explain the different types of Frequency curves in detail.
b) Draw up a list of rules for the construction of graphs. (10+10)

Q. 4: a) Define Median. What are its advantages and disadvantages? Give reasons why the statistician usually prefers the arithmetic mean to the median.

b) Calculate the median and modal numbers of persons per house from the following data.

No. of persons per house	1	2	3	4	5	6	7	8	9	10
No. of houses	26	113	120	95	60	42	21	14	5	4

(10+10)

Q. 5: a) Write down the uses and limitations of index numbers.

b) Construct chain indices for the following years, taking 2000 as the base.

Item	**Year**				
	2000	**2001**	**2002**	**2003**	**2004**
Wheat	2.80	3.40	3.60	4.00	4.20
Rice	2.95	3.60	2.90	2.75	2.75
Maize	3.10	3.50	3.40	4.50	3.70

(10+10)

Total Marks: 100 **Pass Marks: 50**

Assignment No. 2

Q. 1: a) Write down the properties of variance and standard deviation.

b) The following are the scores made by two batsmen A and B in a series of innings:

A	12	15	6	73	7	19	199	36
B	47	12	76	48	4	51	37	48

Who is better as a run getter? Who is the more consistent player?

(10+10)

Q. 2: a) What is a linear regression model? Explain the assumptions underlying the linear regression model.

b) Find the product-moment coefficient of correlation between X and Y. Also, find the coefficient of determination and interpret it.

X	30	35	40	45	50	60	70	80	90	95
Y	2	4	5	5	8	15	24	30	32	40

(10+10)

Q. 3: a) Three missiles are fired at a target. If the probabilities of hitting the target are 0.4, 0.5, and 0.6, respectively, and if the missiles are fired independently, what is the probability? i) That all the missiles hit the target? ii) That at least one of the three hits the target? iii) That exactly one hits the target? iv) That exactly 2 hit the target? v) That no one hit the target?

b) Differentiate between independent and mutually exclusive events. Are independent events mutually exclusive? (10+10)

Q. 4: a) Explain the difference between i) Probability and Non-probability sampling ii) Sampling with and without replacement

b) Write down the general procedure for testing the Hypothesis in detail. (10+10)

Q. 5: (a)An auto company decided to introduce a new six-cylinder car whose mean petrol consumption is claimed to be lower than that of the existing auto engine. It was found that the mean petrol consumption for the 50 cars was 10 km per liter with a standard deviation of 3.5 km per liter. Test at 5% level of significance, whether the claim of the new car's petrol consumption is 9.5 km per liter on average is acceptable.

(b) A manufacturer of ball pens claims that a certain pen he manufactures has a mean writing life of 400 pages with a standard deviation of 20 pages. A purchasing agent selects a sample of 100 pens and puts them to test. The mean writing life for the sample was 390 pages. Should the purchasing agent reject the manufacturer's claim at 1% level? (10+10)