

**Al-Saudia Virtual Academy**  
**Pakistan Online Tuition – Online Tutor Pakistan**

**M.A (PREVIOUS) EXTERNAL ANNUAL EXAMINATION-2004.**

**“ECONOMICS” PAPER-“III”.**

**(ADVANCED ECONOMIC STATISTICS).**

**Time allowed: Three Hours**

**Max.Marks:100**

Instructions: Attempt any and only FOUR questions. Questions carry equal marks.

1. A) given below is the distribution of 15 years-old school boys intelligence quotient

1. Q. : 70-79 80-89 90-99 100-109 110-119 120-129 130-139 140-149

No.of boys: 08 10 20 28 32 36 30 16s

Determine the Mean and Standard Deviation I.Q. [14]

b) Daily wages of some 25 semi skilled workers are found to have a mean of Rs.150 and a standard deviation of Rs.20. In order to provide relief from inflation, the administration decided to increase the wages by 51% and a constant increase of Rs.15 per day.

i) Determine the new mean, standard deviation, and variance. [07]

ii) How the consistency of wages changed after the increase. [04]

2. Give below is a demand schedule of eggs for a small town.

P (Rs. Per dozen): 20 25 28 30 34

Q (000 dozens): s 225 200 190 170 165

i) Using an appropriate regression predict the demand at a price of Rs.33

ii) Determine the coefficient of determination and interpret your result [05]

iii) Using a suitable method interpolate the demand at a price of Rs.33 [01]

3. A) for some 6 observations the first three raw moments about 15 as origin are - 4, - 4, 45, and -430, respectively

i) Determine the first three moments about the mean and the mean and standard deviation. [07]

ii) Find the first three raw moments by shifting the origin to 10 [07]

iii) Comment about the Skewness of the data. [03]

b) The mean and the quartile deviation of the two quartiles are 51.3, and 12.6 respectively. Determine the values of the two quartiles and hence the coefficient of quartile deviation. [08]

4. A) What are upward and downward biases of index numbers, how are they removed. [08]

b) What are the steps involved in the construction of indices. [07]

c) From the following data construct and name the indices with (base=2000) [10]

i) Current period quantities as weights.

ii) Base period quantities as weights.

Items	2000		2005	
	Price	quantity	Price	quantity
A	15	20	18	25
B	25	10	30	12
C	20	15	22	20
D	10	12	15	15
E	12	08	15	10

5. A) Write short notes on the following.

[15]

- i) Kurtosis ii) Rank correlation iii) Principle of Least Squares
- b) Distinguish between. [10]
  - i) Primary & Secondary data ii) Partial & Multiple Correlation
- 6.a) Manufacturers of Exide batteries claim that their batteries provide a trouble free service for 33 month on the average with a standard deviation of 6 months. A transporter purchase 2000 batteries for his fleet, ho many of these batteries would provide a service for (assuming normality) [10]
  - A) More than three year.
  - b) Between 30 to 40 months.
  - c) Less than two years.
  - d) Between 20 to 30 months.
- b) One bag contains 3 white, 4 black, and 2 red balls. A second bag contains 5 white, 6 black, and 3 red balls. One ball is drawn at random from bag I, and placed unseen into the second bag. What is the probability that a ball now drawn from the second bag is red? [08]
  - c) A town has three ambulances operating independently, the probability that a specific ambulance is available when needed is 0.95, what is the probability that.
    - i) Neither is available ii) at least one is available  $A^1 = 1-A$  [07]