

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

M.A. (PREVIOUS) EXAMINATION 2002 HELD IN 2003

ECONOMICS (PAPER-III)

(ADVANCED ECONOMIC STATISTICS)

Time: 3 Hours

Max. Marks: 100

Instructions: 1) Attempt any Five Questions.

2) Marks indicated against each question.

Q.1 In a medical study to determine normal limits of blood cholesterol some 220 adult healthy meals were examined with respect to their level of cholesterol. Its distribution is given as under.

Level of cholesterol (mg)	No. of persons
Less than 100	18
100 – 110	22
110 - 115	28
115 – 120	30
120 – 130	35
130 – 145	43
145 – 165	24
165 – 175	12
175 an above	8

- (i) Determine the median and mode level of cholesterol
- (ii) Determine the quartile deviation (Q.D) of the data.
- (iii) If median+2 Q.D are considered to the normal limits what are the normal limits and what percent of persons have normal level of Cholesterol approximately.

Q.2 Marks obtain by a group of 10 students out of 50 is given as under.
40 42 38 45 50 47 36 35 48 45

- (i) Determine the first three row moments about 45 as origin
- (ii) Determines the first three true moments and comment about Skewness.
- (iii) From the raw moments obtained in (I) above shift the origin of the first two to 40.

Q.3 Proficiency in economics (measured by marks obtained in economics) is thought to be influenced by the proficiency in mathematics (measured by marks obtained in mathematics). A group of 10 students obtain marks as follows.

Marks in Math: 50 55 58 65 55 65 66 59 85 70

Marks ub Econ. 75 82 78 85 77 82 88 78 84 90

(a) Construct an appropriate regression, determine the value of r^2 and interpret your result.

(b) Determine the Spearman's rank correlation coefficient for the above data.

Q.4(a) Explain, using examples, the effect of a change in the units of measurement and scale on the following.

(i) Arithmetic mean (ii) Standard deviation (iii) Coefficient of variation.

(b) What is the lowest limit of cholesterol of the (I) Top 15 percent of persons?

(ii) Next 12 percent of persons for the data of question me above.

Q.5 (a) two dice are rolled simultaneously and the product of their out come is recorded.

(i) List the elements of the sample space.

(ii) Find the probability of getting a perfect square.

(iii) Find the probability of a number multiple of 6.

(b) A coin is biased so that the probability of a head is $\frac{2}{3}$. Find the probability of exactly three heads in five tosses of that coin.

© Find the probability of a three digit even number greatest then 450 from the digits 0, 1, 2, 3, 5, and 6 (no digit repeat in the same number)

(d) From the letters of the word "Statistics" Find the probability of all words staring and finishing with the letters.

Q.6 (a) given below is a schedule of prices and the profit earned at each of these prices of a product. Interpolate, using a suitable method, the profit of a firm when the price is Rs.18.

Price (Rs) 10 13 15 20

Profit (Million Rs.) 35 45 48 55

(c) Give the simple correlation coefficients $r_{12} = 0.6$

$r_{13} = 0.7$. $r_{22} = -0.5$ determine r_{123} and r_{133}

Q.7 (a) Construct Fisher and Marshall Indices for 2002 with 2001 as base from the following.

Items	Price		Quantities	
	2001	2002	2001	2002
A	20	15	30	25
B	25	30	10	8
C	18	20	20	25
D	30	25	25	30

E 15 18 22 28

(b) Construct 4 yearly moving averages cent red for the following sales in Million Rupees for the period 1992 to 2002.

Sales	220	225	232	247	250	255
	258	265	278	300	325	

Q.8 Write short notes on any Two of the following:

(i) Time series Analysis (ii) Organization of Sample Survey (iii) Sources of Secondary Data.