Total No. of Questions—4] [Total No. of Printed Pages—4

Seat No.	

[4904]-207

M.A. (PART I) (II Semester) EXAMINATION, 2016

ECONOMICS

(EC-207 : Statistical Techniques)

(2008 PATTERN)

Time : Three Hours **Maximum Marks : 80**

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Answers should be precise and to the point.

(*iv*) Use of non-programmable calculator is allowed.

1. Attempt any *one* out of two of the following : [20]

(1) Find Karl Pearson's coefficient of correlation from the following series of marks secured by 10 students in a class test in Economics and quantitative methods.

Marks in Economics	Marks in Q.M.
45	35
70	90
65	70
30	40
90	95
40	40
50	60
75	80
85	80
60	50

Also calculate the probable error; and the value of y is significant or not ?

P.T.O.

(2) Calculate 5 yearly weighted variables for the following data using weights 1, 1, 3, 2, 1 respectively.

Year	Coded Sales
1	40
2	33
3	72
4	81
5	76
6	68
7	91
8	87
9	98
10	97

2. Attempt any *one* out of two of the following : [20]

(1) In a partially destroyed records of an analysis of correlation data, the following results only are legible :

Variance of x is 9

Regression equations :

$$8x - 10y + 66 = 0$$

$$40x - 18y = 214.$$

Then find :

(*i*) The mean values of x and y

(*ii*) The standard deviation of y and,

(*iii*) The coeff-corr. between x and y.

(2) Compute chains indices and fixed base indices with 2003 as base from the data given below :

Year	Price of wheat
2003	20
2004	25
2005	30
2006	45
2007	63

3. Attempt any *two* of the following : [20]

(1) Machine produced 19 defective articles in a batch of 500, after overhauling it produce 4 defectives in a batch of 100. Has the machine improved ?

(2) 'A' can hit a target 3 times in 5 shots, 'B' 2 times in 5 shots, and 'C' 3 times in 4 shots. They fire a volley. What is probability of hitting 2 shots ?

(3) Define correlation and write the significance with application of correlation.

(4) Find the mean, median and mode for the following

Mid-values	**Frequencies**
15	2
20	22
25	19
30	14
35	3
40	4

4. Attempt any *four* out of six of the following : [20]

(1) Using appropriate subscripts notation, write the regression equation of :

(*a*) x_2 on x_1 and x_3

(*b*) x_3 on x_1, x_2 and x_4

(*c*) x_5 on x_1, x_2, x_3 and x_4.

(2) Four probabilities arrange to meet at a hotel in a town. It happens that there are four hotels of the same name in the town. What is the probability that :

(*a*) All of them meet

(*b*) No two persons are in the same hotel.

(3) If on an average one ship in every ten is wrecked; find the probability that out of 5 ships expected to arrive, 4 at least will arrive safely.

(4) The mean height of 500 students is 165 cm, and the standard deviation is 15 cm. Assuming that the heights are normally distributed, find how many students heights lie between 120 and 155 cm.

(5) Write the advantages and disadvantages of sampling.

(6) Write characteristics of hypothesis.