Roll No. ....

Subject Code—2140

M. Com. (Part I) EXAMINATION

MC-106

BUSINESS STATISTICS

Time : 3 *Hours*   *Maximum Marks* : 100

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. All questions carry equal marks.

1. Discuss the following in brief :
   (a) Dispersion
   (b) Random sampling
   (c) Coefficient of correlation
   (d) Stand error
   (e) Central limit theorem
   (f) Index numbers
   (g) Poisson Distribution
   (h) Acceptance Sampling
   (i) Large samples
   (j) Geometric Mean.

(2-08–06-09)

2. (a) What do you understand by mode ? Explain the application of mode in decision making.

(b) From the following data, calculate standard deviation :

Class Interval	Frequency
10–20	9
20–30	18
30–40	31
40–50	17
50–60	16
60–70	9

3. Calculate Karl Pearson's coefficient of correlation between ages of husband and wife :

Age of husband (years) (X)	Age of Wife (years) (Y)
19	14
21	16
22	15
23	14
23	17
2·	14

24	17
25	18
26	17
26	20
27	21
28	20
28	22
29	22
30	23

4. **(a)** What do you mean by time series analysis ? Explain the components of time series.

(b) What are index numbers ? Explain the application of index numbers.

5. **(a)** Explain the properties of normal distribution.

(b) Three groups of children contain 3 girls and 1 boy, 2 girls and 2 boys, 1 girl and 3 boys respectively. One child is selected from each group. Find the probability of the three selected consisting of girl and 2 boys.

6. Ten individuals are chosen at random from a population and their heights in inches are found to be 63, 63, 66, 67, 68, 69, 70, 70, 71, 71 respectively. In the light of these data find out that mean height of the population may be 66 inches by using 5% and 1% level of significance.

7. A sample of 400 students of under-graduate and 400 students of post-graduate classes was taken to know their opinion about autonomous colleges. 290 of under-graduate and 310 of the post-graduate students favoured the autonomous status. You are required to test that the opinion regarding autonomous status of colleges are independent of the level of classes by using χ^2 test.

8. (a) Explain the procedure of testing of hypothesis.

   (b) What is statistical quality control ? Explain the different types of control charts.