CH-II/Commerce-202-C-4/19

B.Com. 2nd Semester (Honours) Examination, 2019

COMMERCE

(Business Statistics)

Paper : 202-C4

Course ID : 21212

Time: 2 Hours **Full Marks: 40**

The figures in the margin indicate full marks.
Candidates are required to give their answer in their own words as far as practicable.

1. Answer *any five* questions: 2×5=10

(a) Find the median from the following numbers:

4, 3, 2, 4, 5, 3, 2, 3, 1, 6

(b) Write two demerits of Arithmetic Mean.

(c) If the mean and median of a frequency distribution are 10 and 9 respectively, find the mode of the distribution.

(d) Find the standard deviation of 1, 2, 3, 4, 5, 6....., 100.

(e) Write three characteristics of a good measure of dispersion.

(f) If the lines $4x + y = 52$ and $x + y = 32$ be the regression lines of x on y and of y on x respectively, obtain the correlation coefficient.

(g) Write down the formula for second quartile.

(h) Name an index number which satisfies the time reversal test but not the factor reversal test.

2. Answer *any four* questions: 5×4=20

(a) The expenditure of 100 families is given below:

Expenditure in Rs. :	0–10	10–20	20–30	30–40	40–50
No. of families :	14	?	27	?	15

Mode of the distribution is 24. Calculate missing frequencies.

(b) Show that standard deviation is independent of the change of origin but depends on the change of scale.

(c) An experiment consists of in throwing a die 5 times and noting the number of sixes. The experiment was repeated 200 times with the following results:

No. of Sixes :	0	1	2	3	4	5
Frequency :	58	86	40	14	2	0

Find the standard deviation of the sample.

(d) Suppose the following series of values for two variables x and y are given:

x	:	1	2	3	4	5	6	7	8	9
y	:	9	8	7	6	5	4	3	2	1

What will be the correlation coefficient between x and y?

(e) Find the first three central moments for the data: 2, 5, 8, 9.

(f) During a certain period the cost of living index number goes up from 110 to 200 and the salary of a worker is also raised from Rs. 325 to Rs. 500. Does the worker really gain, if so, how much in real terms?

3. Answer *any one* question: 10×1=10

(a) (i) The mean of 5 observations is 4·4 and their variance is 8·24. If three of the observations are 4, 6, 9, find the other two.

(ii) Write the range of coefficient of skewness.

In a distribution, the difference of the two quartiles is 2·03; their sum is 72·67 and the median is 36·18. Find the coefficient of skewness. 5+(1+4)=10

(b) (i) Show that the mean deviation is least when measured about median.

(ii) Do we consider these two lines $2x + 3y = 7$ and $3y - 7x + 2 = 0$ as the regression lines? Give reasons.

If b_{xy} and b_{yx} are of negative signs, then what is the sign of r_{xy}? 5+(4+1)=10

———————