

B.Com. DEGREE (C.B.C.S.S.) EXAMINATION, NOVEMBER 2012**First Semester****Core Course I—BUSINESS STATISTICS**

(Prior to 2012 Admissions)

[Common for Model-I, Model-II and UGC sponsored B.Com. Degree Programmes]

Time : Three Hours

Maximum Weight : 25

Section A*Answer all questions.**Each bunch of four questions carries a weight of 1.***I. Choose the correct answer from the choices given :****1. In a positively skewed distribution :**

- (a) Mean < Median < Mode.
- (b) Mean > Median > Mode.
- (c) Mean – Mode = 3 (Mean – Median.)
- (d) None of these.

2. "Index number are specialized type of averages". This statement was made by :

- (a) Wessel.
- (b) Blair.
- (c) Bowley.
- (d) Keans.

3. Standard deviation is defined as :

- (a) Mean of deviations taken from the value of average.
- (b) Mean of deviations taken from the value of median.
- (c) Square root of average of the squares of deviations taken from the value of mean.
- (d) Square root of average of the squares of deviations taken from the value of mode.

4. Rank correlation was developed by :

- (a) Horace Secrist.
- (b) A.L. Bowly.
- (c) Karl Pearson.
- (d) Edward Spearman.

II. Fill in the blanks :

- 5. _____ lies between the maximum and minimum values of a series.
- 6. If variance is 144, then standard deviation is _____.

Turn over

7. Correlation is an analysis of the ———— between two or more variables.

8. A set of data depending on time is called a ————.

III. State whether the following statements are True or False :

9. Index Numbers are devices for measuring differences in the magnitude of a group of related variables.

10. Geometric mean is not a mathematical average.

11. Moving average is the long term tendency of a particular activity to grow or decline.

12. The value of perfect correlation will be either +1 or -1.

IV. Match the following :

13. Positive Correlation

(a) Absolute measure of dispersion.

14. Standard deviation

(b) Retail Price Index.

15. Cost of living index

(c) Booms and depressions.

16. Cyclic variations

(d) Same direction.

(e) Karl Pearson.

(f) Whole Sale Price Index.

(g) Mean deviation.

(4 × 1 = 4)

Section B

Answer any five questions.

Each question carries a weight of 1.

17. What is Statistics ?

18. Explain Histogram.

19. What is range ?

20. Price of three commodities viz., A, B and C rised by 40%, 60% and 90% respectively. Commodity A is six times more important than C, and B is three times more important than C. What is the mean rise in price of these three commodities ?

21. Calculate co-efficient of mean deviation from mean from the following :-

$$N = 350, \Sigma f X = 356 \quad \Sigma f |d| = 351.12.$$

22. Calculate Karl Pearson's correlation co-efficient between X and Y from the following data :

$$N = 10 \quad \Sigma X = 35 \quad \Sigma X^2 = 203 \quad \Sigma Y = 28 \quad \Sigma Y^2 = 140 \quad \text{and} \quad \Sigma XY = 168.$$

23. Mention any two uses of Index Numbers.

24. What is Irregular variation ?

(5 × 1 = 5)

Section C

Answer any four questions.

Each question carries a weight of 2.

25. Define median and explain its merits and demerits.
26. What is correlation ? What are the uses of studying it ?
27. Calculate the number of shops corresponding to class-interval 30 – 40 of the following distributions :-

Profit/Shop	: 0-10	10-20	20-30	30-40	40-50	50-60
No. of Shops	: 12	18	27	?	17	6

Mean profit per shop is 28.

28. Calculate the standard deviation of the following data by short method.

Person	:	1	2	3	4	5	6	7
Monthly Income (Rs)	:	300	400	420	440	460	480	5800

29. Calculate the Geometric mean from the following distribution.

Marks	:	5	15	25	35	45
No. of Students	:	5	7	15	25	8

30. Distinguish between Interpolation and Extrapolation.

(4 × 2 = 8)

Section D

Answer any two questions.

Each question carries a weight of 4.

31. The daily temperature recorded in a city in India in a year is given below :

Temperature C°	No. of days
-40 to -30	10
-30 to -20	28
-20 to -10	30
-10 to 0	42
0 to 10	65
10 to 20	180
20 to 30	10

Calculate the Mean and Standard Deviation.

Turn over

32. Find out the coefficient of correlation in the following case :-

Height of Father : 65 66 67 67 68 69 71 73
(in inches)

Height of son : 67 68 64 68 72 70 69 70
(in inches)

33. Calculate Fisher's ideal index number from the following :

Commodity	2009		2010	
	Price	Expenditure	Price	Expenditure
A	8	800	10	1200
B	10	1200	12	960
C	5	400	5	500
D	4	560	3	600
E	20	1000	25	1500

Also show that it satisfies the time reversal tests.

(2 × 4 = 8)