E 6864 (Pages : 3) Reg. No.....

Name.....

B.Com. DEGREE (C.B.C.S.S.) EXAMINATION, NOVEMBER 2013

First Semester

Core-1—BUSINESS STATISTICS

(Common for Model-I, Model-II and U.G.C. Sponsored B.Com. Degree Programmes)

(2013 Admissions)

Time : Three Hours Maximum : 80 Marks

Part A (Short Answer)

Answer **all** *questions.*

Each question carries 1 *mark.*

1. Define Statistics.
2. What do you mean by Combined Arithmetic Mean ?
3. Define Geometric mean.
4. What are the positional averages ?
5. What is meant by 'random fluctuations' ?
6. Define Quartile Deviation.
7. Define Variance.
8. Define Skewness.
9. Write note on measure of kurtosis.
10. Why index numbers are called economic barometers ?

(10 × 1 = 10)

Part B (Brief Answers)

Answer any **eight** *questions.*

Each question carries 2 *marks.*

11. Explain how statistics can be misused.
12. What are the desirable properties of an ideal average ?

Turn over

13. Under what circumstances Weighted Arithmetic Mean is a preferable measure.

14. Explain the merits and limitations of harmonic mean.

15. What are the algebraic properties of Geometric mean ?

16. Discuss the method of locating mode graphically.

17. If a sample of size 22 items has a mean of 15 and another sample of size 18 items has a mean of 20, find the mean of the combined group.

18. In a moderately asymmetrical distribution, the mode and mean are 32.1 and 35.4 respectively. Calculate Median.

19. Briefly discuss any *four* limitations of Standard Deviation.

20. Eight coins were tossed together. The number of heads obtained is given below. Find the mean :

No. of heads	:	0	1	2	3	4	5	6	7	8
No. of times	:	1	9	26	59	72	52	29	7	1

21. In a distribution, the difference of the two quartiles is 15, their sum is 35 and Median is 20. Find the co-efficient of skewness.

22. The first four moments of a distribution are 0, 2.5, 0.7 and 18.75. Comment on the kurtosis of the distribution.

(8 × 2 = 16)

Part C (Short Essays)

Answer any **six** *questions.*
Each question carries 4 *marks.*

23. Define Median and Mode and explain how far they satisfy the requisites of a good average.

24. Calculate MD from Median from the following data :

Marks (less than)	:	80	70	60	50	40	30	20	10
Number of students	:	100	90	80	60	32	20	13	5

25. For a group containing 100 observations the mean and the standard deviation are 8 and $\sqrt{10.5}$. For 50 observations selected from them mean and the standard deviation are 10 and 2 respectively. Find the mean and standard deviation of the other half.

26. How do you calculate mode by graphical method ? Illustrate with an example.

27. Calculate Karl Pearson's co-efficient of skewness from the following data :

Income in Rs : 25, 30, 27, 35, 41, 62, 37, 40, 50, 45

28. Explain the various problems involved in construction of index numbers.

29. Explain the various components of time series.

30. Calculate the trend assuming a three yearly moving cycle :

Year	1994	1995	1996	1997	1998	2000	2001	2002	2003	2004
Production (Lakh tons)	19.2	19.3	18.1	20.2	25.3	24.9	23.2	24.3	25.2	26.3

31. Find mode from the following data :

Size of items : 32, 85, 62, 32, 52, 62, 85, 84, 95

(6 × 4 = 24)

Part D (Essays)

Answer any **two** *questions.*
Each question carries 15 *marks.*

32. From the following data, calculate the modal value :

Weight (kgs)	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90
No.of. Persons	4	6	20	32	33	17	8	2

33. Goals scored by Team A and Team B are as follows. Find which team is more consistent:

No.of Goals Scored	0	1	2	3	4
Team A	27	9	8	5	4
Team B	17	9	6	5	3

34. From the following table, calculate Bowley's Co-efficient of skewness :–

Size of item	0–9	10–19	20–29	30–39	40–49	50–59	60–69
Frequency	10	15	20	25	10	12	8

35. From the following data, calculate Fisher's ideal index number and prove that Fisher's formula satisfy the time reversal test and factor reversal test.

	Base Year		*Current Year*	
Items	*Price*	*Quantity*	*Price*	*Quantity*
Rice ...	6	50	10	56
Wheat ...	2	100	2	120
Potato ...	4	60	6	60
Onion ...	10	30	12	24
Oil ...	8	40	12	36

(2 × 15 = 30)