B.Com. DEGREE (C.B.C.S.S.) EXAMINATION, NOVEMBER 2014

First Semester

Core 1—BUSINESS STATISTICS

(Common for Model-I, Model-II and UGC Sponsored B.Com. Programmes)

[2013 Admission onwards]

Time : Three Hours   Maximum : 80 Marks

Part A (Short Answer Questions)

Answer all questions.
Each question carries 1 mark.

1. What is statistics ?

2. What do you mean by Measure of Central Tendency ?

3. What do you mean by Weighted Arithmetic Mean ?

4. Define harmonic mean ?

5. What do you understand by mode ?

6. What is absolute measure of dispersion ?

7. Define Standard Deviation.

8. What do you mean by symmetric distribution ?

9. Explain the term 'Kurtosis'.

10. Write down the symbolic representation of 'first moment'.

(10 × 1= 10)

Part B (Brief Answer Questions)

Answer any eight questions.
Each question carries 2 marks.

11. Explain the role of statistics in the field of business and commerce ?

12. State the characteristic of Arithmetic Mean.

13. Explain the mathematical properties of median.

14. The average weight of a group of 25 boys was calculated to be 78.4 pounds. It was later discovered that one weight was misread as 69 pounds instead of the correct value of 96 pounds. Calculate the correct average.

Turn over

15. An aeroplane covers the four sides of a square at varying speeds of 800, 1300, 1800 and 2300 km./ hr. respectively. What is the average speed of the plane around the square ?

16. Define range and explain its merits and demerits.

17. Calculate Mean Deviation from the following data. (Take deviation from median)

    Roll No. :   1   2   3   4   5   6   7

    Marks   :   25 32 36 45 48 50 50

18. How will you test the presence of skewness ?

19. The following information was obtained from records of a factory relating to wages: Mean = 56.8, Median = 59.5, σ = 12.4. Calculate the coefficient of variation and the coefficient of skewness.

20. What is meant by analysis of time series ?

21. Why measures of dispersion is called an average of second order ?

22. In a moderately asymmetrical frequency distribution, the values of mode and median are 52.5 and 43 respectively. Calculate arithmetic mean.

$(8 \times 2 = 16)$

Part C (Descriptive/Short Essay Type Questions)

Answer any six questions.

Each question carries 4 marks.

23. Find mode from the following data :

    Size of items : 23, 45, 62, 23, 52, 62, 45, 84, 95.

24. Define median and mode and explain how far they satisfy the requisites of a good average ?

25. Find the Range, Interquartile Range and Quartile Deviation from the following values

    18, 32, 25, 40, 55, 82, 20, 25, 10, 42, 55, 72.

26. Construct Index number using Geometric mean.

Commodities		A	B	C	D	E
Prices in 2000	...	50	20	42	25	110
Prices in 2007	...	70	22	45	26	120

27. Prove that standard deviation is independent of the change of origin but is dependent on the change of scale.

28. Determining the trend by applying the method of semi-averages:

Year	:	1995	1996	1997	1998	1999	2000	2001	2002
Values	:	45	58	62	50	70	72	68	70

29. Explain the merits and demerits of free hand curve method.

30. In the case of two firms A and B the following information is given :

		Firm A	Firm B
Mean	...	80	30
SD	...	5.8	6.3
No. of workers	...	20	30

Calculate the average wage and standard deviation of both the firms as a whole.

31. Calculate the long term trend and short term oscillations from the following data, assume a three yearly moving cycle :—

Year	:	1989	1990	1991	1992	1993	1994	1995	1996
Export of rubber (tons.)	:	1600	1500	1650	2100	2600	3100	3200	3500

$(6 \times 4 = 24)$

Part D (Long Essay)

Answer any two questions.
Each question carries 15 marks.

32. Following are the records of two players regarding their performance in cricket matches:

Player A	48	52	55	60	65	45	63	70
Player B	33	35	80	70	100	15	41	25

(a) Which player has scored more on average ?

(b) Who is more consistent in his performance ?

33. Find Karl Pearson's coefficient of skewness from the data given below :

Income (Rs.)	:	400 - 500	500 - 600	600 - 700	700 - 800	800 - 900
No. of Employee	:	8	16	20	17	3

Turn over

34. What do you mean by index numbers ? Explain the various uses of index numbers.

35. Fit a straight line trend by the method of least squares to the following data. Assuming that the same rate change continues, what would be the estimated earnings for the year 1997.

Year	:	1988	1989	1990	1991	1992	1993	1994	1995
Earnings (Rs. In Lakhs)	:	38	40	65	72	69	60	87	95

$(2 \times 15 = 80)$