

B.Com (CS) DEGREE EXAMINATION NOVEMBER 2019
CORPORATE SECRETARYSHIP
THIRD SEMESTER

COURSE : ALLIED – CORE
PAPER : BUSINESS STATISTICS
TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS:

(10 x 2 = 20)

1. Define regression analysis.
2. Calculate mean from the following data:

S.NO	1	2	3	4	5	6	7	8
X	30	16	20	26	18	24	36	18

3. What do you mean by time series?
4. Fit a trend line to the following data by the method of semi-averages:

Year	2011	2012	2013	2014	2015	2016	2017
Sales of Firm A (1000 units)	102	105	114	110	108	116	112

5. What is one tail test?
6. From the following data of the wages of 7 workers, compute the median wage:

Wages in Rs.	1,100	1,150	1,080	1,120	1,200	1,160	1,400
--------------	-------	-------	-------	-------	-------	-------	-------

7. What are the properties of the sample distribution of t?
8. If two regression coefficients are 0.8 and 0.6, what would be the value of coefficient of correlation?
9. A coin was tossed 400 times and the head turned up 216 times. Test the hypothesis that the coin is unbiased.
10. Define Yates Correction.

SECTION – B

ANSWER ANY FIVE QUESTIONS:

(5 x 8 = 40)

11. Write merits and demerits of standard deviation.
12. What are the components of time series?
13. A random sample of 200 tins of coconut oil gave an average weight of 4.95 kgs with a standard deviation of 0.21 kg. Do we accept the hypothesis of net weight 5 kgs per tin at 1% level? (at 1% the table value is 2.58)
14. A fertilizer mixing machine is set to give 12 kg of nitrate for every quintal bag of fertilizer. Ten 100 kg bags are examined and percentage of nitrate is as follows:
11, 14, 13, 12, 13, 12, 13, 14, 11, 12.
Is there reason to believe that the machine is defective?

15. A set of 5 identical coins is tossed 320 times and the number of heads appearing each time is recorded.

No.of heads	0	1	2	3	4	5
frequency	14	45	80	112	61	8

Test whether the coins are unbiased at 5% level of significance. (For 5df at 5% level is 11.07)

16. Fit a trend line to the following data by the method of semi – averages :

Year	1991	1992	1993	1994	1995	1996	1997
Sales ('000')	51	54	57	55	54	58	56

17. Compute mode from the following data:

X	5	10	15	20	25	30	35	40	45
F	1	3	4	9	11	12	3	2	2

SECTION – C

ANSWER ANY TWO QUESTIONS:

(2 x 20 = 40)

18. You are given the following data:

	X	Y
A.M	36	85
S.D	11	8

Correlation coefficient between X and Y = 0.66

- Find the two regression equations
- Estimate value of X when Y = 75

19. Given below are the figures of production of a sugar factory

Year	1990	1991	1992	1993	1994	1995	1996
Production	77	88	94	85	91	98	90

- Fit a straight line by Least Square method and tabulate the trend values.
- What is the monthly increase in the production of sugar?

20. The sample of heights of 6400 Englishmen has a mean of 170 cms and standard deviation of 6.4 cms, while a sample of heights of 1600 Australians has a mean of 172 cms and standard deviation of 6.3 cm. Do the data indicate that the Australians are on the average taller than the Englishmen? (The 1% level of significance, the table value is 2.33)

21. Wire cable is manufactured by two processors. Laboratory tests were performed by putting samples of cables under tension and recording the load required (coded units) to break the cable giving the following data:

Process I	9	4	10	7	9	10	
Process II	14	9	13	12	13	8	10

Can we say that the two processes have the same effect on the mean breaking strength, at 5% level of significance?