

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.

(For candidates admitted during the academic year 2016– 2017)

SUBJECT CODE: 16CM/AC/BS35

B.Com (CS) DEGREE EXAMINATION NOVEMBER 2017

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 Statistics.
2. Mention any four functions of Statistics.
3. Define Chi-Square.
4. Mention the utility of Time series analysis.
5. Mention the different types of Averages.
6. From the following data of the wages of 7 workers, compute the median wage:
Wages (Rs.) : 4,100 4,150 6,080 7,120 5,200 6,160 7,400
7. Calculate the mode from the following data of the marks obtained by 10 students.
Marks: 10, 27, 24, 12, 27, 27, 20, 18, 15, 30.

8. Calculate Co-efficient of Range from the following data:

| Marks | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
|-----------------|-------|-------|-------|-------|-------|
| No. of students | 8 | 10 | 12 | 8 | 4 |

9. A person throws 10 dice 500 times and obtains 2560 times 4, 5, or 6. Can this be attributed to fluctuations of sampling?
10. The mean marks of 100 students were found to be 40. Later on it was discovered that a score of 53 was misread as 83. Find the correct mean corresponding to the correct score.

SECTION – B

ANSWER ANY FIVE QUESTIONS:

(5 x 8 = 40)

11. Explain the limitations of Statistics.
12. Explain the conditions for applying Chi-Square test.
13. Calculate coefficient of correlation from the following data:

| | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|
| X | 100 | 200 | 300 | 400 | 500 | 600 | 700 |
| Y | 30 | 50 | 60 | 80 | 100 | 110 | 150 |

14. Assuming that the trend is absent, determine if there is any seasonality in the data given below:

| Year | 1 st quarter | 2 nd quarter | 3 rd quarter | 4 th quarter |
|------|-------------------------|-------------------------|-------------------------|-------------------------|
| 2004 | 3.7 | 4.1 | 3.3 | 3.5 |
| 2005 | 3.7 | 3.9 | 3.6 | 3.6 |
| 2006 | 4.0 | 4.1 | 3.3 | 3.1 |
| 2007 | 3.3 | 4.4 | 4.0 | 4.0 |

What are the seasonal indices for various quarters?

15. Find out the value of quartile deviation and its coefficient from the following data:

| | | | | | | | |
|---------|----|----|----|----|----|----|----|
| Roll No | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Marks | 20 | 28 | 40 | 12 | 30 | 15 | 50 |

16. Calculate median from the following data:

| | | | | | |
|-----------------|------|-------|-------|-------|-------|
| Marks | 0-10 | 10-30 | 30-60 | 60-80 | 80-90 |
| No. of students | 5 | 15 | 30 | 8 | 2 |

17. From the following data compute arithmetic mean by direct method:

| | | | | | | |
|-----------------|------|-------|-------|-------|-------|-------|
| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| No. of students | 5 | 10 | 25 | 30 | 20 | 10 |

SECTION – C

ANSWER ANY TWO QUESTIONS:

(2 x 20 = 40)

18. You are given the following data:

| | | |
|---|------|----|
| Particulars | X | Y |
| Arithmetic mean | 36 | 85 |
| Standard deviation | 11 | 8 |
| Correlation coefficient between x and y | 0.66 | |

1. Find the two Regression Equations, and
2. Estimate the value of X when Y = 75.

19. In an anti malarial campaign in a certain area, quinine was administered to 812 persons out of a total population of 3,248. The number of fever cases is shown below:

| | | | |
|------------|-------|----------|-------|
| Treatment | Fever | No fever | Total |
| Quinine | 20 | 792 | 812 |
| No quinine | 220 | 2,216 | 2,436 |
| Total | 240 | 3,008 | 3,248 |

Discuss the usefulness of quinine in checking malaria.

20. A random sample of size 16 has 53 as mean. The sum of the squares of the deviations taken from mean is 135. Can this sample be regarded as taken from the population having 56 as mean? (for $v=15$, $t_{0.05}=2.13$, for $v=15$, $t_{0.01}=2.95$)

21. Calculate the trend values by the method of 4-yearly moving averages.

| | | | | | | | | | | |
|------------|------|------|------|------|------|------|------|------|------|------|
| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| Production | 464 | 515 | 518 | 467 | 502 | 540 | 557 | 571 | 586 | 612 |
