

D. K. M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1
SEMESTER EXAMINATIONS
NOVEMBER - 2017

15CBA1B

BUSINESS MATHEMATICS AND STATISTICS - I

Time : 3 Hours

Max. Marks : 75

SECTION – A (10 x 2 = 20)

Answer ALL the questions.

1. Define Statistics.
2. What is Pie Diagram?
3. Define Mode.
4. Find the Mean from the data,
49, 52, 60, 74, 58, 67.
5. Find the Geometric Mean for 9 and 36.
6. Write the formula for Range.
7. Find simple Interest on Rs. 2500 at 6 % per annum for 5 years?
8. Write the formula for compound Interest Annually.
9. If $y = 4x^{-6}$. Find $\frac{dy}{dx}$.
10. If $y = x^4 + \log x$. Find $\frac{dy}{dx}$.

SECTION – B (5 x 5 = 25)

Answer any FIVE of the following questions.

11. Explain the limitations of statistics.
12. Draw Histogram for the following data,

| | | | | | | |
|----------------|------|-------|-------|-------|-------|-------|
| Class Interval | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| Frequency | 5 | 15 | 30 | 35 | 20 | 18 |

13. Compare Harmonic mean for the following data,

| | | | | | |
|-----------|----|----|----|----|----|
| Value | 11 | 22 | 33 | 44 | 55 |
| Frequency | 3 | 2 | 4 | 6 | 1 |

14. Find the standard deviation for the data
8, 9, 12, 14, 15, 10, 9
15. If Mean = 45 and S.D = 9. Find the Co-efficient of variation?

16. Find the Range and Co-efficient of Range?

| | | | | | | | | |
|-----------------|------|-------|-------|-------|-------|-------|-------|-------|
| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
| No. of Students | 10 | 4 | 20 | 7 | 3 | 14 | 6 | 8 |

17. John took a loan for Rs. 15,000 for 3 years at simple interest. If the total interest paid is Rs. 2700.

What is the rate of interest per annum?

18. Differentiate the function $x^5 e^x$.

SECTION – C (3 x 10 = 30)

Answer ALL the questions.

19. (a) Represent a Pie diagram for the following data.

| Type of Commodity | Expenditure (in rupees) |
|-------------------|-------------------------|
| Food | 300 |
| Rent | 200 |
| Clothes | 125 |
| Education | 110 |
| Miscellaneous | 75 |
| Savings | 90 |

(Or)

(b) Distinguish between diagram and graph.

20. (a) Find the Mean, Median and Mode for the following data.

| | | | | | | | | |
|----------------|------|-------|-------|-------|-------|-------|-------|-------|
| Class Interval | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
| Frequency | 12 | 18 | 35 | 42 | 50 | 45 | 20 | 8 |

(Or)

(b) Find the Co-efficient of Variation for the data,

| | | | | | | |
|---|---|---|---|---|---|---|
| x | 2 | 3 | 4 | 5 | 6 | 7 |
| y | 1 | 5 | 8 | 4 | 2 | 1 |

21. (a) Find the compound interest on Rs.16,000 at 20 % per annum for 9 months, compounded quarterly.

(Or)

(b) Find the derivative of $\frac{2x^2}{x+1}$.

* * * * *