C. ABDUL HAKEEM COLLEGE (AUTONOMOUS),
MELVISHARAM - 632 509.
SEMESTER EXAMINATIONS, NOVEMBER - 2018

B.B.A., **SEMESTER I**

U15MBA102/ U14MBA102 – BUSINESS MATHEMATICS AND STATISTICS - I

Time: Three Hours Maximum: 75 Marks

SECTION - A (10 X 2 = 20 Marks)

Answer **ALL** Questions.

1. State any two objectives of statistics.
2. Give any two difference between diagram and graph.
3. Find the mode of the following numbers:
   850 750 600 825 850 725 600 850 640 530?
4. Calculate arithmetic mean: 40 50 55 78 58 60 73 35 43 48.
5. Find the Quartile deviation if Q_1=40 and Q_3 =60.
6. Find coefficient of variation if standard deviation=23.81 and arithmetic mean=193.9.
7. Calculate the number of years in which an investment of Rs 30,000 at 12% rate of simple interest per annum amounted to Rs 39,000.
8. Find the compound interest on Rs 5,000 at 8% per annum for 4 years.
9. Differentiate $5x + \log x + e^x$.
10. Find the derivate of $y = \frac{3x^2+3x}{x}$.

SECTION - B (5 X 5 = 25 Marks)

Answer **ALL** Questions.

11. a) What are the limitations of a diagram?

    (Or)

    b) Find the Harmonic Mean *x*: 2574, 475, 75, 5, 0.8, 0.005, 0.0009.

12. a) Calculate median.

Size of shoes	5	5.5	6	6.5	7	7.5	8
frequency	10	16	28	15	30	40	34

    (Or)

    b) Calculate Arithmetic mean.

X	1	2	3	4	5	6	7	8	9	10
Frequency	21	30	28	40	26	34	40	9	15	57

13. a) Calculate Standard deviation 14 22 9 15 20 17 12 11.

    (Or)

    b) Calculate Quartile deviation

    239 250 251 251 257 258 260 261 262 273 275.

14. a) Find the present worth of a bill for Rs 1,660 due in 9 months at 5% per annum.

    (Or)

    b) Find the bankers discount and true discount on a bill of Rs. 3,750 due in 8 months at 8% per annum.

15. a) Differentiate *(x-1)(2x+1) (3x+5)*.

    (Or)

    b) Differentiate $(3x^2 - 1)^3$.

SECTION - C (3 X 10 = 30 Marks)

Answer **ANY THREE** Questions.

16. Explain the limitations of statistics.

17. Calculate the mean wages for the following factory.

Factory A	
Weekly wages in rupees	Number of workers
Below 20	3
20-40	7
40-60	10
60-80	6
Above 80	4

18. From the prices of shares X find coefficient of variation.

55	54	52	53	56	58	52	50	51	49

19. A has 2 sons. He left Rs 1,50,000 for his two sons. According to to his will, the amount should be invested in a bank at 12% simple interest per annum, so that, the two sons get the same amount when they attained the age of 20. The elder son was 17 years old and the younger son was 14 years old when the man died. Find the amount of investment for the two sons.

20. Let the cost function of a firm be given by the equation

    $C(x) = 300x - 10x^2 + x^3/3$. C(x) stands for cost function and x for output. Calculate.

    a) Output at which marginal cost is minimum.

    b) Output at which average cost is minimum.

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