

(2)

Unit-II

2. Define and explain the derivative of a function.

OR

Find the derivative of $y = \frac{1}{x^3} + x^{3/2}$.

Unit-III

3. Discuss the importance of the concept of probability in statistic.

OR

In an urn there are 1 black and 2 white balls. In another there are 2 black and 1 white ball. A ball is drawn from the first and put into the second and then a ball is drawn from the second urn. Show that the chance that it is

white is $\frac{5}{12}$.

Unit-IV

4. Explain the uses and limitations of the tests of significance.

OR

Ten individuals are chosen at random from a population and their incomes are found to be (₹) 63, 63, 64, 65, 66, 69, 69, 70, 70 and 71.

(3)

Discuss the suggestion that the mean income in the universe is ₹ 65. Given that for a degree of freedom the values of students t -test at 5% level of significance is 2.262.

Unit-V

5. What do you understand by Linear programming? Explain its main characteristics.

OR

Solve the following Linear programming problem graphically :

Minimize $Z = 3x + 2y$

such that $x + y \leq 5$

$3x + y \geq 6$

$x + 4y \geq 4$

$0 \leq x \leq 3$

and $0 \leq y \leq 3$