

Enrollment No: _____

Total Marks: 30

(05)

- (05)**

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4. Find the derivative of $y = x^3 + 3^3 + 3^x$ with respect to x .
5. If the Demand Function is $p = 20 - 3x$ then find Marginal Revenue.

Q.2 Do As Directed :- (each of 2.5 marks)

(05)

- A). Find the Tangent Line and Normal Line of $6x^2 + 3xy + 2y^2 + 17y - 6 = 0$ at $(-1, 0)$
- B). Check whether the function $f(x) = \begin{cases} 3x + 2, & x > 1 \\ 5, & x = 1 \end{cases}$ is Continuous or not.

Q.3 Answer the following questions :-

- A). The demand function of a commodity is $x = 20 - 2p$. Calculate the elasticity of Demand when the Price is 2. **(02)**
- B). Find Maximum and Minimum values of $f(x) = 4x^3 + 19x^2 - 14x + 3$. **(03)**

Q.4 Do As Directed :- (Attempt Any Two)

(10)

- A). Determine for all intervals $f(x) = x^4 - 8x^2$, where f is Increasing or Decreasing.
- B). If the demand function is $p = 20 - x$ and its average cost is Rs. 5 then find Maximum Profit.
- C). The Price of Joggeries increases from Rs. 2 per kilogram to Rs. 3 per Kg. and its supply increases from 2000 Kg. to 2500 Kg. Calculate Elasticity of supply.