Dr. SNS RAJALAKSHMI COLLEGE OF ARTS AND SCIENCE (Autonomous)
Accredited by NAAC (Cycle-IV) with 'A+' Grade,
(Recognized by UGC & Approved by AICTE, New Delhi and Affiliated to Bharathiar University, Coimbatore)
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Subject: SUPPORTIVE / ALLIED MATHEMATICS-2: BUSINESS CALCULUS AND FINANCIAL COMPUTATION **Code:** 21UCR304

QUESTION AND ANSWER
UNIT: 3

1. If the demand function is $P = 4 - 5x$ for what value of x will elasticity of demand be unitary?
2. If the demand function is $P = 2 - 3x$ for what value of x will elasticity of demand be unitary?
3. Find the elasticity of supply from the supply function $p = 2x^2 + 3 when x = 3$
4. Find the elasticity of supply from the supply function $P = -2 + 5x$.
5. Find the average cost and marginal cost function from the total cost function $T = 60 + 10x + 15x^2$.
6. Find the average cost and marginal cost function from the total cost function $T = 30 + 15x + 5x^2$.
7. The marginal cost function for producing x units in $y = 23 + 16x - 3x^2$ and the total cost for producing x unit is 40 .Obtain the total cost function and the average unit function .
8. The demand curve for a monopolist is given by x = 100 - 4p , Find total revenue , avarage and marginal revenue.
9. The demand curve for a monopolist is given by x = 150 - 5p , Find total revenue and avarage revenue.
10. Find elasticity of demand$q = 32 - 4p - p^2 when p = 3$
11. If the demand law is $x = \frac{20}{P+1}$. Find the elasticity of demand at the point when $P = 3$
12. Find the marginal revenue and average revenue when x=10 from the revenue function $Y = 32x - x^2$
13. If the demand law is $x = \frac{20}{P+1}$. Find the elasticity of demand at the point when $P = 5$
14. Calculate consumer's surplus if the demand function $p = 50 - 2x$ and x=20
15. Find the total and average cost function of the firm when its fixed cost is Rs.500. The marginal cost of a product having output of q units is $90 - 12q + 0.3q^2$.
16. If the demand function of a commodity is $P = 36 - x^2$, find the consumers surplus for $P_0 = 11$
17. If the supply function of a commodity is $P = 2q + 1$, find the producers surplus for $P_0 = 9$
18. A firm produces x units of output at a total cost $C(x) = \frac{1}{10}x^3 - 9x^2 + 85x + 17$. .Find the average cost , average variable cost and average fixed cost. Find the value of these at the level of output of 10 units.
19. If the marginal revenue function of a firm is $\frac{e^x}{100} + x + x^2$. ,find the total revenue function.
20. Find the producers surplus for $P_0 = 11$ if the supply function of a commodity is $P = 2q + 1$,
21. If C(X) rupees is the total cost of manufacturing x toys and $C(x) = 500 + \frac{50}{x} + \frac{x^2}{10}$, find the average cost and the marginal cost when x=20
22. The marginal cost of a product having output of q units is $90 - 12q + 0.3q^2$. Find the total and average cost function of the firm when its fixed cost is Rs.200
23. If C(X) rupees is the total cost of manufacturing x toys and $C(x) = 500 + \frac{50}{x} + \frac{x^2}{10}$, find the average cost and the marginal cost when x=10