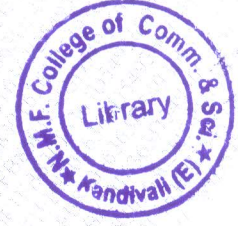


Time: 3 Hrs.

Max Marks: 100

- N.B. (1) All questions are compulsory
 (2) Figures to the right indicate full marks
 (3) Graph papers will be provided on request
 (4) Use of simple non-programmable calculator is allowed



SECTION I

Q.1) Attempt **any four** from the following

- A) Find the derivative of y w.r.t. x : (5)
 i) $y = 5\log x + 3x^2 - 7$
 ii) $y = (4x^2 + 3)/(\log x - 5)$
 B) Find the total revenue function if the demand $D = 300p - p^2$, where p is the price. Also find the total revenue when the price is Rs 5 per unit. (5)
 C) The total cost of x items of commodity is given by $C = x^2 + 20x + 9$. Find Marginal Cost and Average Cost when $x = 3$. (5)
 D) If the demand D is given by $D = 12 + 4p - p^2$. Find the elasticity of demand when $p = 3$ (5)
 E) The total cost of producing x articles is given by $C = 20 + 4x$ and the total revenue from x articles is given by $R = 30x - x^2$. Find the number of articles (x) which maximizes the profit. (5)

Q.2) Attempt **any four** from the following:

- A) At what rate will the simple interest on Rs 15000 for 4 years be equal to the simple interest on Rs 16000 for 3 years at 10% p.a.? (5)
 B) Find the amount on maturity at the end of 2 years of Rs 30000 deposited at 10% p.a. compounded half yearly. (5)
 C) Find the present value of Rs 50000 required after 3 years at 6% p.a. compounded annually. (5)
 D) What amount would be accumulated at the end of 3 years if an annuity of Rs 20000/- is deposited at the end of each year? The rate of interest is 10% p.a. compounded yearly. (5)
 E) Manoj takes a loan of Rs 80000 to be repaid in 4 EMI's at 12% p.a. by reducing balance interest rate. Find the Equated Monthly Instalments (EMI) (5)

