M – I

UNIT – I

1. Find the domain range the following functions
2. y = x2 (ii) y = 1/x (iii) y = (iv) y=
3. (i) y = compressed horizontally by a factor of 4
4. y = stretched vertically by a factor of 3
5. Graphs the sine and cosine functions
6. Discuss the continuity of the function f(x) = at x = 0
7. Let , and . Then find .
8. For what values of a and b is g(x) = continues at every x?.
9. Find vertical and horizontal asymptotes of (i) y = and (ii) y = .
10. Find all asymptotes of x3 – x2y – xy2 + y3 +2x2 – 4y2 + 2xy + x + y + 1 = 0

UNIT - II

1. (i) Using definition find the derivative of f(x) = .
2. Find the tangent line to the curve y = at x = 4
3. Find the derivative of y = .
4. Find if y2 = x2 + sin(xy).
5. A police cruiser approaching a right – angled intersection from the north, is chasing a speeding car that has turned the corner and is now moving straight east. When cruiser is 0.6 m north of the intersection and the car is 0.8 m to the east , the police determine radar that the distance between them and the car is increasing at 20 mph. If the cruiser is moving at 60 mph at the instant of the measurement , what is the speed of the car?
6. Show that the point (2, 4 ) lice on the curve x3 + y3 – 9xy = 0 . Then find the tangent and normal to the curve there .
7. Verify Rolle’s theorem for the function f(x) = in [a, b].
8. Prove that for 0< a < b. Hence deduce that (i)

(ii) .

1. Find positive root of f(x) = x3 – x – 1 by Newton’s method .