

**Grade: XII MATHEMATICS MARKS : 20**

**Choose the most suitable answer:**

1. The function  is not continuous at

(a)  (b)  (c)  (d) none

2. Find the value of , so that the function f is continuous at . 

 (a) 2 (b) 5 (c) 10 (d) -5

3. If 

 (a)  (b)  (c)  (d) 

4. The critical number of f(x)= 2x – 3x2 is

 (a) 1/3 (b)2/3 (c) 3 (d) -1/3

5. If  and  are two roots of a polynomial  then Rolle’s theorem says that there exists at least (a) one root between  and  for 

 (b) two roots between  and  for 

 (c) one root between  and  for 

 (d) two roots between  and  for 

6. The slope of the normal to the curve y = 3x2 at the point whose x coordinate is 2 is (a) 1/13 (b)1/14 (c) -1/12 (d)1/12

7. f is differentiable function defined on an interval I with positive derivative. Then f is (a) increasing on I (b) decreasing on I

(c)strictly increasing on I (d)strictly decreasing on I

8. f is a real valued function defined on an interval  increases on I. Then

 (a) when ever

 (b) when ever 

 (c) when ever 

 (d) when ever 

9. For the curve  the tangent line is parallel to the x-axis when t = (a)  (b)  (c) 0 (d) 

10. The point on the curve  at which the tangent is parallel to  is

 (a)  (b)  (c) (d) 

11. The function  is not differentiable at

 (a) x= 0 (b) x = -1 (c) x = 1 (d) x = -2

12. Let  be the greatest integer function. Then

(a)  is continuous at all integral values (b)  is discontinuous at all integral values

(c)  is the only discontinuous point (d)  is the only continuous point

13. The function  is discontinuous at

 (a) x = 0 (b) x = -1 (c) x = -2 (d) x = 2

14. If  are matrices conformable to multiplication then 

 (a)  (b)  (c) A B (d) B A

15. If AB = BA =  then B is

 (a) adjoint of A (b) inverse of A (c) transpose of A (d) none

16. If the matrixhas an inverse then the value of k

 (a) k is any real number (b) k= -4 (c) 

17. The inverse of the matrix 

 (a)  (b)  (c)  (d) 

18. 

(a)  + c (b)  (c)  (d) 

19. =

 (a)  (b) 

(c)  (d) 

20. 

 (a) log(secx)+c (b) log (secx+tanx)+c (c) log(cosx) (d) log sinx+c