MASTER’S P.U COLLEGE, HASSAN, 573201.

KCET ONLINE TEST-15, APRIL-2020  **MATHEMATICS**  **TIME: 45Mins MARKS: 30**

**TOPIC**: **APPLICATION OF DERIVATIVES, INTEGRATION, AREAS, DIFFERENTIAL EQUESTION.**

1. **A point moves in a straight line during the time  to according to the law . The average velocity is**

(a) 3 (b) 9 (c) 15 (d) 27

1. **A body moves according to the formula, where *v* is the velocity at time *t*. The acceleration after 3 *sec* will be (*v* in *cm*/*sec*)**

(a)  (b)  (c)  (d) None of these

1. **If by dropping a stone in a quiet lake a wave moves in circle at a speed of 3.5 *cm*/*sec*, then the rate of increase of the enclosed circular region when the radius of the circular wave is 10 *cm*, is **

(a) 220 *sq. cm/sec* (b) 110 *sq. cm/sec* (c) 35 *sq. cm/sec* (d) 350 *sq. cm/sec*

1. **The angle between curves  and at (1, 2) is**

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

1. **The tangent to the curve  at a point *P* is parallel to the co-ordinates of *P* are**

(a) (2, 1) (b) (1, 2) (c) (– 1, 2) (d) (2, – 1)

1. **Local maximum and local minimum values of the function are**

(a) – 4, 0 (b) 0, – 4 (c) 4, 0 (d) None of these

1. **If and , then the maximum value of function is at the following value of *x***

(a) 2 (b) –1 (c) – 2 (d) 4

1. **Function is**

(a) Increasing for and decreasing for  (b) Increasing for every value of *x*

(c) Decreasing for every value of *x* (d) None of these

1. 

(a)  (b)  (c)  (d) None of these

1. 

(a)  (b) 

(c)  (d) 

1. 

(a)  (b) 

(c)  (d) 

1. 

(a)  (b) 

(c)  (d) 

1. **If , where *A* is any arbitrary constant, then the function  is**

(a)  (b) 

(c)  (d) 

1. ** is equal to**

(a)  (b) 

(c)  (d) None of these

1. 

(a)  (b) 

(c)  (d) 

1. 

(a)  (b)  (c)  (d) None of these

1. **The value of integral **

(a) 2 (b)  (c) 0 (d) 1

1. **If  then**

(a)  (b) 

(c)  (d) 

1. **The value of  is**

(a) 0 (b) 3/8 (c) 4/3 (d) 

1. 

(a) 2 (b) 4 (c) 6 (d) 8

1. **Let , then  is equal to**

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

1. **is equal to**

(a)  (b) 

(c)  (d) None of these

1. 
2. (a) 0 (b) 

(c)  (d) 

1. **If the ordinate  divides the area bounded by the curve  axis and the ordinates   into two equal parts, then **

(a) 8 (b) 

(c) 2 (d) 

1. **Area bounded by lines   and  is**

(a) 3 (b) 4

(c) 8 (d) 16

1. **The area of figure bounded by  and the straight line  is**

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

1. **If *m* and *n* are the order and degree of the differential equation , then**

(a) *m* = 3 and *n* = 5 (b) *m* = 3 and *n* = 1

(c) *m* = 3 and *n* = 3 (d) *m* = 3 and *n* = 2

1. **Family of curves , represents the differential equation**

(a)  (b) 

(c)  (d) 

1. **Solution of the equation  is**

(a)  (b) 

(c)  (d) 

1. **If  and  when  the value of *x* for  is**

(a)  (b) 

(c)  (d) 