MASTER’S P.U COLLEGE, HASSAN, 573201.

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

**TOPIC**: **1st PU GRAND TEST. DATE: 29/05/2020**

1. **If  then  is**

(a) {(2, 4), (3, 4)} (b) {(4, 2), (4, 3)}

(c) {(2, 4), (3, 4), (4, 4)} (d) {(2,2), (3,3), (4,4), (5,5)}

1. **In a college of 300 students, every student reads 5 newspaper and every newspaper is read by 60 students. The no. of newspaper is**

(a) At least 30 (b) At most 20

(c) Exactly 25 (d) None of these

1. **Let *A* = {1, 2, 3, 4, 5}; *B* = {2, 3, 6, 7}. Then the number of elements in (*A*  × *B*) ∩ (*B* × *A*) is**

(a) 18 (b) 6

(c) 4 (d) 0

1. **Let *A* = {1, 2, 3}, *B*  = {1, 3, 5}. *A* relation  is defined by *R* = {(1, 3), (1, 5), (2, 1)}. Then  is defined by**

(a) {(1,2), (3,1), (1,3), (1,5)} (b) {(1, 2), (3, 1), (2, 1)}

(c) {(1, 2), (5, 1), (3, 1)} (d) None of these

1. ** is an imaginary cube root of unity. If   then least positive integral value of *m* is**

(a) 6 (b) 5

(c) 4 (d) 3

1. **For the equation , the roots are**

(a) One and only one real number (b) Real with sum one

(c) Real with sum zero (d) Real with product zero

1. **Ten persons, amongst whom are *A*, *B* and *C* to speak at a function. The number of ways in which it can be done if *A* wants to speak before *B* and *B* wants to speak before *C* is**

(a)  (b) 

(c)  (d) None of these

1. **The number of ways in which an examiner can assign 30 marks to 8 questions, awarding not less than 2 marks to any question is**

(a)  (b) 

(c)  (d) None of these

1. **The value of the natural numbers *n* such that the inequality  is valid is**

(a) For *n* ≥ 3 (b) For *n* < 3

(c) For *mn* (d) For any *n*

1. **If  then **

(a)  (b) 

(c)  (d) None of these

1. **If  then **

(a)  (b) 

(c)  (d) 

1. **If  then for all values of *θ***

(a)  (b) 

(c)  (d) 

1. **The value of   is equal to**

(a) 7 (b) 8

(c) 9 (d) 

1. **If then =**

(a)  (b) 

(c)  (d) None of these

1. **If then =**

(a)  (b) 

(c)  (d) None of these

1. **The point dividing the line joining the points and  in the ratio  is**

(a)  (b) 

(c)  (d) None of these

1. **The number of solution of the given equation  , where is**

(a) 1 (b) 2

(c) Infinite (d) None of these

1. **The diagonals of a parallelogram are along the lines and . Then  must be a**

(a) Rectangle (b) Square

(c) Cyclic quadrilateral (d) Rhombus

1. **The number of integral values of *m*, for which the *x-*co-ordinate of the point of intersection of the lines  and is also an integer is**

(a) 2 (b) 0

(c) 4 (d) 1

1. **If are con-cyclic points, then the value of is**

(a) 1 (b) – 1

(c) 0 (d) None of these

1. **The normal at the point (3, 4) on a circle cuts the circle at the point (–1, –2). Then the equation of the circle is**

(a)  (b) 

(c)  (d) 

1. **The area of the quadrilateral formed by the tangents at the end points of latusrectum to the ellipse** , is

(a) 27/4 *sq. unit* (b) 9 *sq. unit*

(c) 27/2 *sq. unit* (d) 27 *sq. unit*

1. **The line  is the directrix of the parabola . Then one of the values of *k* is**

(a)  (b) 8

(c) 4 (d) 

1. **The straight line will touch the hyperbola , if**

(a)  (b) 

(c)  (d) 

1. **If *e* and *e’* are the eccentricities of the ellipse  and the hyperbola  respectively, then **

(a) 9 (b) 4

(c) 5 (d) 1

1. **Mean of 100 observations is 45. It was later found that two observations 19 and 31 were incorrectly recorded as 91 and 13. The correct mean is**

(a) 44.0 (b) 44.46

(c) 45.00 (d) 45.54

1. **In a series of 2*n* observations, half of them equal to *a* and remaining half equal to –*a.* If the standard deviation of the observations is 2, then |*a*| equals**

(a)  (b) 

(c) 2 (d) 

1. ** term of the series  will be**

(a)  (b) 

(c)  (d) 

1. **The logically equivalent proposition of  is**

(a)  (b) 

(c)  (d) 

1. **There are two children in a family. The probability that both of them are boys is**

(a)  (b) 

(c)  (d) None of these