MASTER’S P.U COLLEGE, HASSAN, 573201.

KCET ONLINE TEST-17, MAY-2020  **MATHEMATICS** **TIME: 45Mins MARKS: 30**

**TOPIC**: **1st PU TRIGONOMETRY.**

**KEY**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| **B** | **A** | **D** | **B** | **B** | **D** | **A** | **A** | **D** | **C** | **D** | **B** | **C** | **A** | **D** |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| **B** | **C** | **C** | **B** | **B** | **B** | **C** | **C** | **A** | **A** | **B** | **B** | **A** | **B** | **A** |

**HINTS AND SOLUTIONS**

1. (b) Options (a), (c), (d) are false but (b) is correct. *i.e.,*  possible.
2. (a) Since  

It is possible only when , .

1. (d)  .
2. (b) …..(i) …..(ii)

From (i) and (ii), 

1. (b) We have   …..(i)

 where 

 or 

Clearly, satisfies (i); .

1. (d)  





1. (a) 

Therefore  

.

1. (a) .
2. (d) 



.

1. (c) Given equation  and  The given equation may be written as  and Therefore

 …..(i)

 …..(ii)

Divide (i) by (ii), we get 

 ⇒ .

1. (d) 







.

1. (b) 







.

1. (c) 





.

1. (a) 



.

1. (d) 

=.

1. (b) We have, 

Then 

⇒ 

⇒ .

1. (c) .
2. (c) 



.

**Trick :** Put , the value of expression remains 1, therefore it is independent of *A* and is equal to 1.

1. (b) Let 

We know 

Thus the greatest and least value of are  and  respectively.

1. (b) Here and



and  .

1. (b) 



Similarly, 

and 

Therefore, 





1. (c) 

 

Hence or .

But  is ruled out.

1. (c) , also

 .

1. (a)  

Hence different values of  are in A.P. with  as common difference.

1. (a) 

⇒

 

  

 .

1. (b) The given equation can be written as 

   .

1. (b) 

  ⇒ 

⇒ .

1. (a) Given  is satisfied only when  for 
2. (b) 

where , 

Now 

∴ 

 .

1. (a)  

 ,

which is imaginary, hence no solution.