

## Kanakku puthakam

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Total Marks: 25

Class: 10

**I. Choose the correct answer****5x1=5**

- 1) If there are 1024 relations from set  $A = \{1,2,3,4,5\}$  to a set B then the number of elements in B  
 (i) 3                      (ii) 2                      (iii) 4                      (iv) 8
- 2) If the ordered of pairs  $(a+2,4)$  and  $(5,2a+b)$  are equal then  $(a,b)$  is  
 (i)  $(2,-2)$               (ii)  $(5,1)$               (iii)  $(2,3)$               (iv)  $(3,-2)$
- 3) Let  $n(A) = m$ ,  $n(B) = n$  then the total number of non empty relation that can be defined from A to B  
 (i)  $m^n$                       (ii)  $n^m$                       (iii)  $2^{mn}-1$                       (iv)  $2^{mn}$
- 4) let  $f(x) = \sqrt{1+x^2}$  then  
 (i)  $f(xy) = f(x) \cdot f(y)$                       (ii)  $f(xy) \geq f(x) \cdot f(y)$   
 (ii)  $f(xy) \leq f(x) \cdot f(y)$                       (iv) none of these
- 5)  $f(x) = (x+1)^3 - (x-1)^3$  represents a function which is  
 (i) linear                      (ii) cubic                      (iii) reciprocal  
 (iv) quadratic

**II. Answer the following****5x2=10**

6. if the ordered of pairs  $(x^2 - 3x, y^2 + 4y)$  and  $(-2,5)$  are equal then find x and y
7. If  $f(x) = x^2$ ,  $g(x) = 3x$  and  $h(x) = x-2$  find that  $(f \circ g) \circ h$
8. Represent the function  $f = \{(1,2), (2,2), (3,2), (4,3), (5,4)\}$  through  
 (i) an arrow diagram (ii) a table form
9. Define one – one function
10. Find k if  $f \circ f(k) = 5$  where  $f(x) = 2k - 1$

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11. Let  $f(x) = x-1$  find  $f \circ f$

**III. Answer the following**

**2x5=10**

12. Given the function  $f: x \rightarrow x^2 - 5x + 6$  evaluate

(i)  $f(-1)$  (ii)  $f(2a)$  (iii)  $f(2)$  (iv)  $f(x-1)$

13. Let  $f: A \rightarrow B$  be a function defined by  $f(x) = \frac{x}{2} - 1$  where  $A = \{2, 4, 6, 8, 10\}$   
 $B = \{0, 1, 2, 4, 5, 9\}$  represent by

(i) set of ordered pairs (ii) a table (iii) an arrow diagram (iv) a graph

14. Find the value of  $k$  such that  $f \circ g = g \circ f$  if  $f(x) = 3x+2$ ,  $g(x) = 6x-k$

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