

1. A function  $f$  is said to be \_\_\_\_\_ if and only if  $f(a) = f(b)$  implies that  $a = b$  for all  $a$  and  $b$  in the domain of  $f$

- a) One-to-many
- b) One-to-one
- c) Many-to-many
- d) Many-to-one

2. The function  $f(x) = x + 1$  from the set of integers to itself is

- a) Onto
- b) One-to-one
- c) Many-to-many
- d) All of the above

3. A function  $f: A \rightarrow B$  and  $g: A \rightarrow B$  is said to be \_\_\_\_\_ if and only if  $f(x) = g(x)$  for all  $x \in A$

- a) equal
- b) unequal
- c) greater
- d) lesser

4. If  $f$  and  $g$  are one-one function then  $g \circ f$  is also a..... function.

- a) one-one
- b) onto
- c) bijection
- d) All of these

5. If  $A = \{1, 2\}$  and  $B = \{3\}$  then  $B \times A$  is

- a)  $\{(1, 3)(2, 3)\}$
- b)  $\{(3, 1)(3, 2)\}$
- c)  $\{(a, 1)(b, 1)\}$
- d)  $\{(b, 1)(a, 2)\}$

6.If  $a_n$  be the recurrence relation defined by  $a_n = a_{n-1} + a_{n-2} + a_{n-3}$  with  $a_0 = a_1 = a_2 = 1$  then find  $a_4$

- a)23
- b)45
- c)34
- d)5

7.A function  $f : A \rightarrow B$  is one -one then it is called as

- a)injective
- b)surjective
- c)bijective
- d)all of the above

8.How many license plates consisting of three letters followed by three numbers are possible when no repetition is allowed?

- a) $26 \times 25 \times 24 \times 10 \times 9 \times 8 = 11232000$
- b) $26 \times 26 \times 26 \times 10 \times 10 \times 10 = 17576000$
- c) $26 \times 25 \times 24 \times 9 \times 8 \times 7 = 7862400$
- d) $26 \times 26 \times 26 \times 9 \times 9 \times 9 = 12812904$

9.In a survey on the on eating fruits, it was found that 22 like apple, 39 like banana. 25 like grapes. 9 likes grapes and apple. 17 likes apple and banana. 20 likes grapes and banana.6 like all three fruits.4 like none of them. How many persons were surveyed?

- a. 46
- b. 50
- c.54
- d. 56

10.How do you find the number of distinguishable permutations using the letters in FOOTBALL?

- a)10080
- b)11880
- c)40320

d)320

11.  ${}^{12}P_4$  or  $P(12,4)$

a)24

b)132

c)1320

d)11880

12. What is row 5 of Pascal's Triangle?

a)1, 2, 1

b)1, 3, 3, 1

c)1, 5, 10, 10, 5, 1

d)1, 4, 9, 4, 1

13) A graph  $G$  is called a \_\_\_\_\_ if it is a connected acyclic graph

a)Cyclic graph

b)Regular graph

c)Tree

d)Not a graph

14) A node with degree zero is called \_\_\_\_\_.

a)odd node

b)Even node

c)pendent node

d)isolated node

15) A Tree is a connected?

a)cyclic undirected graph

b)acyclic undirected graph

c)acyclic directed graph

d)cyclic directed graph

16)The vertex which is of 0 degree is called?

a)Leaf

b)Root

c)Internal node

d)Edge