Quiz-1

1 . Which of the following sets are null sets ?

A. { }
B. ø
C. Both (a) and (b)
D. {0}

2 . A relation R is defined on the set of positive integers as xRy if $2x + y \leq 5$. The realation R is

A. reflexive
B. transitive
C. symmetric
D. None of these

3 . In a beauty contest, half the number of experts voted for Mr. A and two thirds voted for Mr. B. 10 voted for both and 6 did not vote for either. How many experts were there in all ?

A. 18
B. 24
C. 36
D. 44

4 . If A = {1, 2, 3} then relation S = {(1, 1), (2, 2)} is

A. symmetric only
B. anti-symmetric only
C. an equivalence relation
D. both symmetric and anti-symmetric

5 Which of the following functions are one-to-one functions ?

(a) $f : \{20,21,22\} \to \{40,42,44\}$ defined as $f(x) = 2x$

(b) $f : \{7,8,9\} \to \{10\}$ defined as $f(x) = 10$

(c) $f : I \to R$ defined as $f(x) = x^3$

(d) $f : R \to R$ defined as $f(x) = 2 + x^4$

(d) $f : N \to N$ defined as $f(x) = x^2 + 2x$

6 Which of the following functions are many-to-one functions ?

(a) $f : \{-2,-1,1,2\} \to \{2,5\}$ defined as $f(x) = x^2 + 1$

(b) $f : \{0,1,2\} \to \{1\}$ defined as $f(x) = 1$

(c)

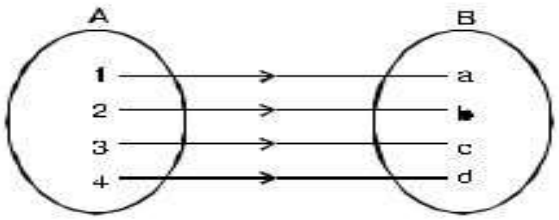

Fig.15.39

7 Find *fog*, *gof*, *fof* and *gog* for the following functions :

$f(x) = x^2 + 2$, $g(x) = 1 - \frac{1}{1-x}$, $x \neq 1$.