

9. Let  $A = \{1, 2, 3, 4\}$  and  $B = \{4, 8, 9, 10\}$ . A function  $f : A \rightarrow B$  given by  $f = \{(1, 4), (2, 8), (3, 9), (4, 10)\}$  is a
- (1) Many-one function
  - (2) Identity function
  - (3) One-to-one function
  - (4) Into function
10. If  $f(x) = 2x^2$  and  $g(x) = \frac{1}{3x}$ , then  $f \circ g$  is
- (1)  $\frac{3}{2x^2}$
  - (2)  $\frac{2}{3x^2}$
  - (3)  $\frac{2}{9x^2}$
  - (4)  $\frac{1}{6x^2}$
11. If  $f : A \rightarrow B$  is a bijective function and if  $n(B) = 7$ , then  $n(A)$  is equal to
- (1) 7
  - (2) 49
  - (3) 1
  - (4) 14
12. Let  $f$  and  $g$  be two functions given by
- $$f = \{(0, 1), (2, 0), (3, -4), (4, 2), (5, 7)\}$$
- $$g = \{(0, 2), (1, 0), (2, 4), (-4, 2), (7, 0)\}$$
- then the range of  $f \circ g$  is
- (1) {0, 2, 3, 4, 5}
  - (2) {-4, 1, 0, 2, 7}
  - (3) {1, 2, 3, 4, 5}
  - (4) {0, 1, 2}
13. Let  $f(x) = \sqrt{1 + x^2}$  then
- (1)  $f(xy) = f(x) \cdot f(y)$
  - (2)  $f(xy) \geq f(x) \cdot f(y)$
  - (3)  $f(xy) \leq f(x) \cdot f(y)$
  - (4) None of these
14. If  $g = \{(1, 1), (2, 3), (3, 5), (4, 7)\}$  is a function given by  $g(x) = \alpha x + \beta$  then the values of  $\alpha$  and  $\beta$  are
- (1) (-1, 2)
  - (2) (2, -1)
  - (3) (-1, -2)
  - (4) (1, 2)
15.  $f(x) = (x+1)^3 - (x-1)^3$  represents a function which is
- (1) linear
  - (2) cubic
  - (3) reciprocal
  - (4) quadratic

