



CA FOUNDATION MATHEMATICS

3rd Session



Question 1

The inverse h^{-1} when $h(x) = \log_{10} x$ is:

- (a) $\log_{10} x$ (b) 10^x (c) $\log_{10}(1/x)$ (d) None

Question 2

Let R be the set of real numbers such that the function $f: R \rightarrow R$ and $g: R \rightarrow R$ are defined by $f(x) = x^2 + 3x + 1$ and $g(x) = 2x - 3$. Find $(f \circ g)$.

- (a) $4x^2 + 6x + 1$ (b) $x^2 + 6x + 1$ (c) $4x^2 - 6x + 1$ (d) $x^2 - 6x + 1$

Question 3

For the function $h(x) = 10^{1+x}$, the domain of real values of x where $0 \leq x \leq 9$, the range is:

- (a) $10 \leq h(x) \leq 10^{10}$ (b) $0 \leq h(x) \leq 10^{10}$ (c) $0 < h(x) < 10$ (d) None

Question 4

If $f(x) = \left(\frac{x^2 - 4}{x - 2} \right)$, then $f(2)$ is:

- (a) 0 (b) 2 (c) 4 (d) 1

Question 5

Let $A = \{1, 2, 3\}$, then $R_3 = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 1), (2, 3), (3, 2)\}$

- (a) Only Symmetric (b) Reflexive & Symmetric
(c) Reflexive & Transitive (d) Symmetric & Transitive



Question 6

Out of a group of 20 teachers in a school, 10 teach Mathematics, 9 teach Physics and 7 teach Chemistry. 4 teach Mathematics and Physics but none teach both Mathematics and Chemistry. How many teach Chemistry and Physics? How many teach only Physics?

- (a) 3; 2 (b) 2; 3 (c) 4; 5 (d) None

Question 7

Let Z be the universal set for two sets – A and B . If $n(A) = 300$, $n(B) = 400$ and $n(A \cap B) = 200$, then $n(A' \cap B')$ is equal to 400 provided $n(Z)$ is equal to:

- (a) 900 (b) 800 (c) 700 (d) 600

Question 8

At a certain conference of 100 people there are 29 Indian women and 23 Indian men. Out of these Indian people 4 are doctors and 24 are either men or doctors. There are no foreign doctors. The number of women doctors attending the conference is:

- (a) 2 (b) 4 (c) 1 (d) None

Question 9

If R is the set of isosceles right-angled triangles and I is set of isosceles triangles, then:

- (a) $R = I$ (b) $R \supset I$ (c) $R \subset I$ (d) None