

SUBJECT NAME -MATHEMATICS

1. Let T be the set of all triangles in the Euclidean plane, and let a relation R on T be defined as aRb if a is congruent to b, $a, b \in T$. Then R is
 (A) reflexive but not transitive (B) transitive but not symmetric
 (C) equivalence (D) none of these
2. If a relation R on the set $\{1,2,3\}$ be defined by $R=\{(1,2)\}$ then R is
 (A) reflexive (B) transitive
 (C) symmetric (D) none of these
3. If $f: R \rightarrow R$ given by $f(x) = (3 - x^3)^{\frac{1}{3}}$, find $f \circ f(x)$
 (A) $x^{1/3}$ (B) x^3 (C) x (D) $(3 - x^3)$
4. Let $A = \{1,2,3\}$. The number of equivalence relations containing $(1,2)$ is
 (A) 1 (B) 2 (C) 3 (D) 4
5. Let $f: R \rightarrow R$ defined by $f(x) = x^4$. Choose the correct answer
 (A) *f is one one onto* (B) f is many one onto (C) f is oneone but not onto
 (D) f is neither one-one nor onto
6. Let $f: R \rightarrow R$ defined by $f(x) = 3x$. Choose the correct answer
 (A) *f is one one onto* (B) f is many one onto (C) f is one-one but not onto
 (D) f is neither one-one nor onto
7. If $A = \{1,2,3\}$, $B = \{4,6,9\}$ and R is a relation from A to B defined by 'x is smaller than y'. The range of R is
 (A) $\{1, 4, 6, 9\}$ (B) $\{4,6,9\}$ (C) $\{1\}$ (D) none of these
8. The relation $R = \{(1,1),(2,2),(3,3)\}$ on $\{1,2,3\}$ is
 (A) *symmetric only* (B) reflexive only (C) transitive only (D) an equivalence relation
9. Let $A = \{1,2,3\}$ and consider the relation $R = \{(1,1),(2,2),(3,3),(1,2),(2,3),(1,3)\}$ then R is
 (A) reflexive but not symmetric (B) reflexive but not transitive
 (C) symmetric and transitive (D) neither symmetric nor transitive
10. Let us define a relation R in R as $a R b$ if $a \geq b$. Then R is
 (A) an equivalence relation (B) reflexive, transitive but not symmetric
 (C) symmetric, transitive but not reflexive (D) neither transitive nor reflexive but symmetric