

FML

FIRST MID TERM TEST - 2024

Karthi

10 - Std

MATHEMATICS

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Time : 1.30 Hrs

Salem

Marks : 50

PART - I

I Answer the following questions.

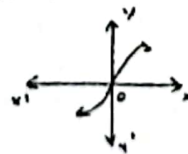
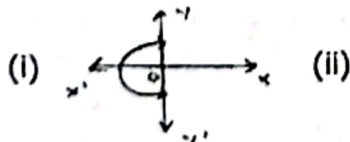
8 X 1 = 8

- If $n(A \times B) = 6$ and $A = \{1, 3\}$ then $n(B)$ is
a) 1 b) 2 c) 3 d) 6
- The Range of the relation $R = \{(x, x^2) / x \text{ is prime number less than } 13\}$ is
a) $\{2, 3, 5, 7\}$ b) $\{2, 3, 5, 7, 11\}$
c) $\{4, 9, 25, 49, 121\}$ d) $\{1, 4, 9, 25, 49, 121\}$
- 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
a) Many one function b) Identity function
c) One to - one function d) Info function
- The sum of the exponents of the prime factors in the prime factorization of 1729 is
a) 1 b) 2 c) 3 d) 4
- Given $F_1 = 1$, $F_2 = 3$ and $F_n = F_{n-1} + F_{n-2}$ then F_5 is
a) 3 b) 5 c) 8 d) 11
- The value of $(1^3 + 2^3 + 3^3 + \dots + 15^3) - (1 + 2 + 3 + \dots + 15)$ is
a) 14400 b) 14200 c) 14280 d) 14520
- A system of three linear equations in three variable is inconsistent if their planes
a) Intersect only at a point b) Intersect in a line
c) Coincides with each other d) do not intersect
- If $n(A) = P$, $n(B) = q$ then total number of relation that exist from A to B is
a) 2^P b) 2^P c) 2^{Pq} d) pq^2

PART - II

II Answer any 6 questions. Questions no. 16 is compulsory. 6 x 2 = 12

- A relation R is given by the set $\{(x, y) / y = x + 3, x, y \text{ are natural numbers } < 10\}$ to Draw an arrow diagram)
- Determine the whether the graph given below represent function. Given reason for your answer concernign each graph.



- Find K if $f(k) = 5$ where $f(x) = 2k-1$.

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