



TOPIC : 8 – Tutorial 5

1. State the pigeon hole principle.
2. If seven colours are used to paint 50 bicycles, then show that atleast 8 bicycles will be the same colour.
3. In how many ways can all the letters in “MATHEMATICAL” be arranged?
4. Twelve students want to place order of different ice-creams in a ice-cream parlour, which has six type of ice-creams. Find the number of orders that the twelve students can place
5. Find the recurrence relation for the Fibonacci sequence.
6. Find the recurrence relation satisfying the equation $y_n = A(3)^n + B(-4)^n$.
7. Solve the recurrence relation $a_{n+1}-a_n=3n^2-n, n \geq 0, a_0=3$.
8. Solve the recurrence relation $a_{n+2}-6a_{n+1}+9a_n=3(2^n)+7(3^n), n \geq 0$ given that $a_0=1$ and $a_1=4$.
9. Solve the recurrence relation $a_{n+2}-5a_{n+1}+6a_n=2^n \forall n \geq 2$ if $a_0=3$ and $a_1=35$.