**Q.9** A function $F(A, B, C)$ defined by three Boolean variables A, B and C when expressed as sum of products is given by
$F = \left(\overline{A} \cdot \overline{B} \cdot \overline{C}\right) + \left(\overline{A} \cdot B \cdot \overline{C}\right) + \left(A \cdot \overline{B} \cdot \overline{C}\right)$ where, $\overline{A}, \overline{B}$ and $\overline{C}$ are the complements of the respective variables. The product of sums (POS) form of the function F is

(A) $(A + B + C) \cdot \left(A + \overline{B} + C\right) \cdot \left(\overline{A} + B + C\right)$

(B) $\left(\overline{A} + \overline{B} + \overline{C}\right) \cdot \left(\overline{A} + B + \overline{C}\right) \cdot \left(A + \overline{B} + \overline{C}\right)$

(C) $\left(A + B + \overline{C}\right) \cdot \left(A + \overline{B} + \overline{C}\right) \cdot \left(\overline{A} + B + \overline{C}\right) \cdot \left(\overline{A} + \overline{B} + C\right) \cdot \left(\overline{A} + \overline{B} + C\right)$

(D) $\left(\overline{A} + \overline{B} + C\right) \cdot \left(\overline{A} + B + C\right) \cdot \left(A + \overline{B} + C\right) \cdot \left(A + B + \overline{C}\right) \cdot (A + B + C)$