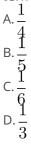
# **Sequence and Series - Class XI**

# **Related Questions with Solutions**

#### **Questions**

#### **Ouetion: 01**

If the arithmetic progression whose common difference is non-zero, the sum of first 3n terms is equal to the sum of next n terms. Then, the ratio of the sum of the first 2n terms to the sum of next 2n terms is.



# **Solutions**

## **Solution: 01**

Let 'a' be the first term and 'd' be the common difference of A.P.

$$\begin{array}{l} \therefore \mathsf{S}_{3n} = \mathsf{S}_{n[\text{next}]} \\ \Rightarrow \mathsf{S}_{3n} + \mathsf{S}_{3n} = \mathsf{S}_{3n} + \mathsf{S}_{n[\text{next}]} \\ \Rightarrow 2\mathsf{S}_{3n} = \mathsf{S}_{4n} \\ \Rightarrow 2 \times \frac{3n}{2} [2a + (3n - 1)d] = \frac{4n}{2} [2a + (4n - 1)d] \\ \Rightarrow 2a = [1 - n]d \dots [i] \\ \mathsf{To} \ \text{find:} \ \frac{\mathsf{S}_{2n}}{\mathsf{S}_{2n(\text{next})}} = \frac{\frac{2n}{2} [2a + (2n - 1)d]}{\frac{2n}{2} [2(a + (2n + 1 - 1)d) + (2n - 1)d]} \\ = \frac{2a + (2n - 1)d}{2a + (6n - 1)d} \\ = \frac{(1-n) + (2n - 1)}{(1-n) + (6n - 1)} \qquad \{ \ from \ (i) \} \\ = \frac{1}{5} \end{array}$$

# **Correct Options**

Answer:01

**Correct Options: B**