

NCERT EXEMPLAR SELECTED PROBLEMS :
PROBLEM 3

Q42. The value of $\tan 3A - \tan 2A - \tan A$ is

- (a) $\tan 3A \cdot \tan 2A \cdot \tan A$
- (b) $-\tan 3A \cdot \tan 2A \cdot \tan A$
- (c) $\tan A \cdot \tan 2A - \tan 2A \cdot \tan 3A - \tan 3A \cdot \tan A$
- (d) None of these

Sol: (a)

$$3A = A + 2A$$

$$\Rightarrow \tan 3A = \tan (A + 2A)$$

$$\Rightarrow \tan 3A = \frac{\tan A + \tan 2A}{1 - \tan A \cdot \tan 2A}$$

$$\Rightarrow \tan A + \tan 2A = \tan 3A - \tan 3A \cdot \tan 2A \cdot \tan A$$

$$\Rightarrow \tan 3A - \tan 2A - \tan A = \tan 3A \cdot \tan 2A \cdot \tan A$$