

Q $A \rightarrow$ Non-singular matrix satisfying
 $AB - BA = A$. Choose correct option(s)

A. $|B+I| = |B-I|$

B. $|B+I| = |A+I|$

C. $|B+I| = |B|$

D. $|B-I| = |B|$

Soln - $A \rightarrow$ Non singular $\Rightarrow |A| \neq 0$

$$AB - BA = A$$

$$AB = A + BA$$

$$|AB| = |A + BA|$$

$$|A| \cdot |B| = |A| \cdot |I + B|$$

$$|B| = |B+I| \quad \text{--- (1)}$$

$$AB - A = BA$$

$$A(B-I) = BA$$

$$|A \cdot (B-I)| = |B \cdot A|$$

$$|A| \cdot |B-I| = |B| \cdot |A|$$

$$|B-I| = |B| \quad \text{--- (2)}$$

from (1) & (2)

$A, C, D \Rightarrow$ correct