

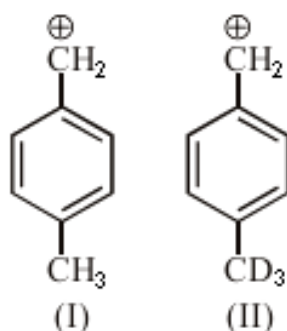
Answer on Question#41230-Chemistry-Organic Chemistry

Question

These questions consist of two statements each, printed as Assertion and Reason. While answering these questions you are required to choose any one of the following four responses.

- A. If both Assertion and Reason are True and the Reason is a correct explanation of the Assertion.
- B. If both Assertion and Reason are True but Reason is not a correct explanation of the Assertion.
- C. If Assertion is True but the Reason is False.
- D. If both Assertion and Reason are False.

Assertion: Carbocation (II) is more stable than carbocation (I).



Reason: Carbocation (II) has more positive inductive effect of $-\text{CD}_3$ group as compared to $-\text{CH}_3$ group.

Answer

- (1) A – correct
- (2) B
- (3) C
- (4) D

Both carbocation (I) and carbocation (II) are stabilized by positive inductive effect (+I). The more positive inductive effect the more stable the carbocation.

Carbocation (II) is more stable than carbocation (I), because the inductive effect of $-\text{CD}_3$ group is more positive compared to that of $-\text{CH}_3$ group. It is, because the inductive effect of D is greater than that of H (+I effect of H is negligible).