

## FlexiPrep

### Valency of Carbon (Tetravalency) , Hybridization of Carbon, Tetravalence, Questions (For CBSE, ICSE, IAS, NET, NRA 2022)

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#### Questions

What is the Tetravalency of Carbon?

**Answer:**

Carbon can form single, double and triple covalent bonds with other carbon atoms. Now as we can see above that carbon has 4 unpaired electrons in its excited state so it can form 4 covalent bonds with other atoms and this property of carbon is called tetravalency of carbon.

How the Valency of Carbon is 4?

**Answer:**

The outer electronic configuration of carbon is  $2s^2 2p^2$ . Thus, it has 4 valence electrons. It shares these 4 valence electrons to form 4 covalent bonds. Hence, valency of carbon is 4.

What is the Formula for Valency?

**Answer:**

If the number of electrons in the outer shell is between one to four, the compound is said to have positive valency. For compounds with electrons four, five, six, or seven, the valency is determined by subtracting the electron from eight.

**Assertion**

Carbon shows tetravalency in all hydrocarbons.

**Reason**

Carbon shares its four valence electrons with other atoms and forms four single covalent bonds to get nearest noble gas formation.

**Options:**

(A) Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.

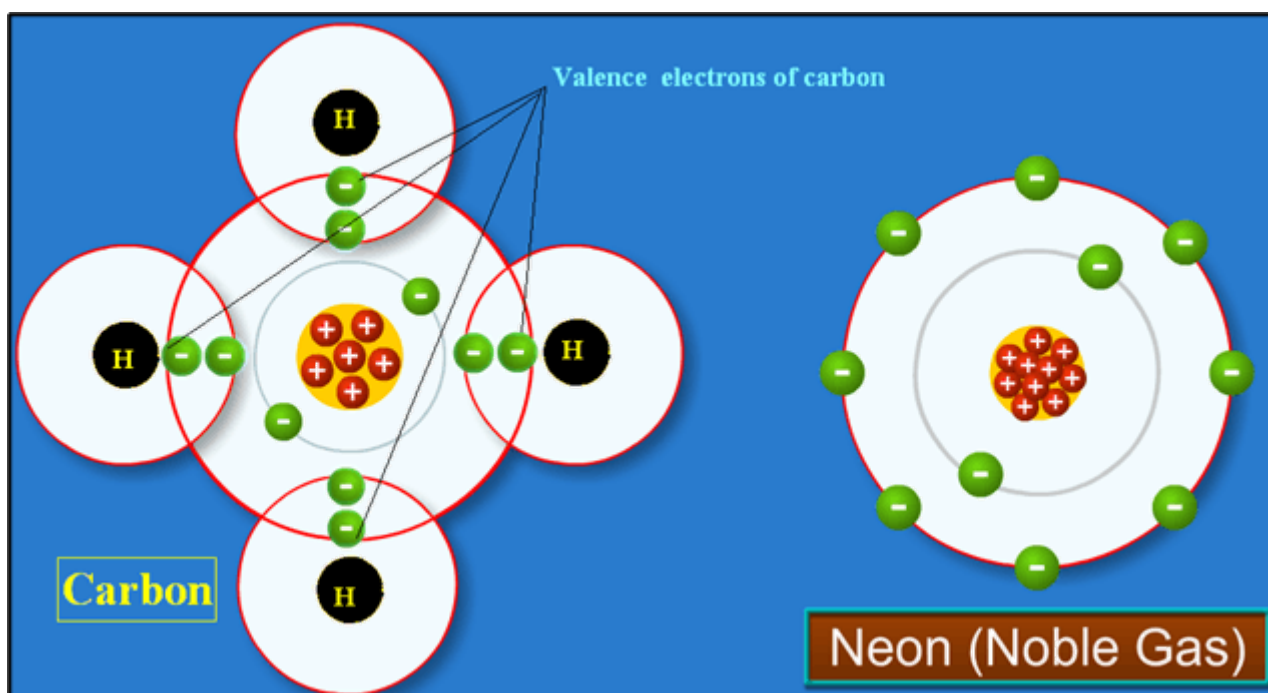
(B) Both Assertion and Reason are correct but Reason is not the correct explanation for Assertion.

(C) Assertion is correct but Reason is incorrect.

(D) Both Assertion and Reason are incorrect.

Answer: (A)

- Carbon shares its four valence electrons with other atoms and forms four single covalent bonds to get nearest noble gas formation.
- All the carbon compounds which contain just carbon and hydrogen are called hydrocarbons. This is known as tetravalency. Thus, Carbon shows tetravalency in all hydrocarbons. and statement is true.



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