DPP-2

SOLUTION

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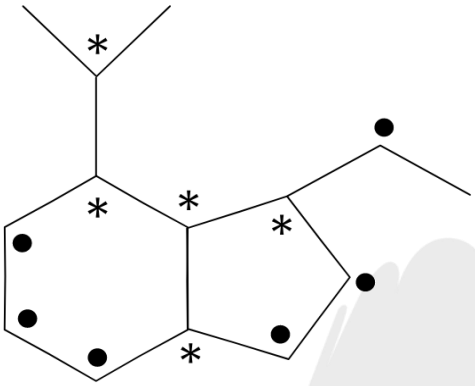
1. 5 , 6

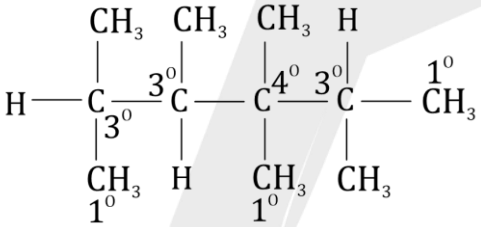


$* = 3^o$ carbon $\bullet = 2^o$ carbon

2. a, b and d have hydrogen atoms.

Therefore, the correct answer of the above question is option (B)- a, b and d

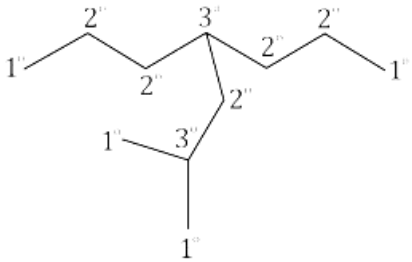
3.



4. The correct option is A1°H → 9, 3°H → 1

1°H, 2°H&3°H are the hydrogen attached to 1°, 2° and 3° carbon atoms respectively. In the given compound, we have three 1° and one 3° carbon atoms. Hence we have one 3° and nine 1° hydrogens.

5.



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6. No. of secondary carbon atoms present in above compound is 5 .

Benzene contains 6C − C sigma bonds, 3C = C pi bonds and six C − H sigma bonds respectively.

Cyclohexane contains 6C − C sigma bonds and 12C − H sigma bonds.

Dichloromethane contains 2C − H sigma bonds and 2C − Cl sigma bonds.

Allene contains 2C − C sigma bonds, 2C = C pi bonds and 4C − H sigma bonds.

Nitromethane contains 3C − H sigma bonds, 1C − N sigma bond, 2 N − O sigma bonds and 1 N = O pi bond.

N-methyl formamide contains 2C − N sigma bonds, four C − H sigma bonds, one N − H sigma bond, one C − O sigma bond and one C − O pi bond.

8. The correct option is B

Carbon has a valency of 4 .

(i) If a single bond is formed by a carbon atom with a carbon atom, then 3 remaining valence are occupied by hydrogen atoms.

(ii) If two single bonds are formed by a carbon atom with two other carbon atom, then 2 remaining valency are occupied by hydrogen atoms.

(iii) If a double bonds are formed by a carbon atom with a carbon atom, then 2 remaining valency are occupied by hydrogen atoms.

(iv) If a single and a double bond is formed by a carbon atom with two other carbon atoms, then 1 remaining valency are occupied by hydrogen atoms.

Therefore, total number of hydrogen atoms are 10 .

9. When multiple bonds are formed between two atoms, only one bond is sigma bond and other bonds are pi bonds.
There are four double bonds in the above structure.
So, there are four pi bonds.
Each pi bond is formed by two electrons.

Hence, total number of pi-electrons are eight.