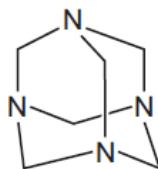


1. Nov/2023/Paper_9701/11/No.25

Hexamine is a crystalline solid used as a fuel in portable stoves.

The diagram shows its skeletal structure.

hexamine



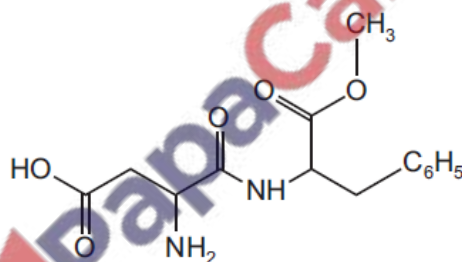
What is the empirical formula of hexamine?

- A CH_2N B $\text{C}_3\text{H}_6\text{N}_2$ C $\text{C}_4\text{H}_8\text{N}_4$ D $\text{C}_6\text{H}_{12}\text{N}_4$

2. Nov/2023/Paper_9701/11/No.26

The compound *aspartame* is widely used as a sweetener in 'diet' soft drinks.

aspartame



Aspartame is chiral. (There are no chiral carbon atoms in C_6H_5 .)

How many chiral carbon atoms are present in a molecule of *aspartame*?

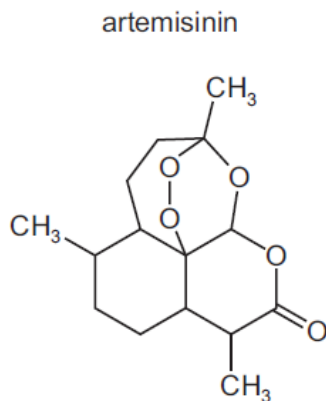
- A 1 B 2 C 3 D 4

3. Nov/2023/Paper_9701/11/No.27

How many σ and π bonds are in the molecule $\text{HCCCH}_2\text{CH}_2\text{CHC}(\text{CH}_3)_2$?

- A $17\sigma\ 3\pi$ B $17\sigma\ 5\pi$ C $18\sigma\ 4\pi$ D $19\sigma\ 3\pi$

4. Nov/2023/Paper_9701/12/No.27
Artemisinin is a powerful anti-malarial drug.



How many chiral centres are there in each molecule of artemisinin?

- A 4 B 6 C 7 D 8

5. Nov/2023/Paper_9701/12/No.29
How many geometrical (cis/trans) isomers are there of hex-2,4-diene, $\text{CH}_3\text{CH}=\text{CHCH}=\text{CHCH}_3$?

- A none; hex-2,4-diene does not show geometric isomerism
B 2
C 3
D 4