

## PREVIOUS YEAR JEE PROBLEMS :-

**Q1:**

2-hexyne gives *trans*-2-hexene on treatment with (2004, 1M)

- (a) Li/NH<sub>3</sub> (b) Pd/BaSO<sub>4</sub>  
(c) LiAlH<sub>4</sub> (d) Pt/H<sub>2</sub>

**Q2:**

Give the chemical test to distinguish between 2-butyne and 1-butyne. (1985, 1M)

**Q3:**

..... is most acidic. (Ethane, Ethene, Ethyne) (1981, 1M)

**Q4:**

When propyne is treated with aqueous H<sub>2</sub>SO<sub>4</sub> in the presence of HgSO<sub>4</sub>, the major product is (1983, 1M)

- (a) propanal (b) propyl hydrogen sulphate  
(c) acetone (d) propanol

**Q5:**

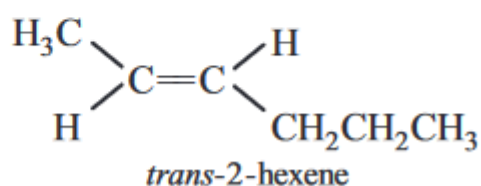
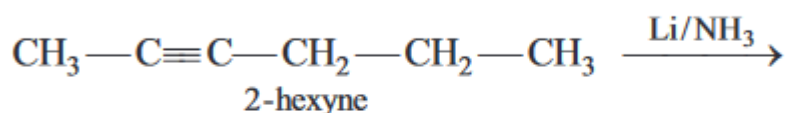
The number of structural and configurational isomers of a bromo compound, C<sub>5</sub>H<sub>9</sub>Br, formed by the addition of HBr to 2-pentyne respectively, are (1988, 1M)

- (a) 1 and 2 (b) 2 and 4 (c) 4 and 2 (d) 2 and 1

## **SOLUTION :**

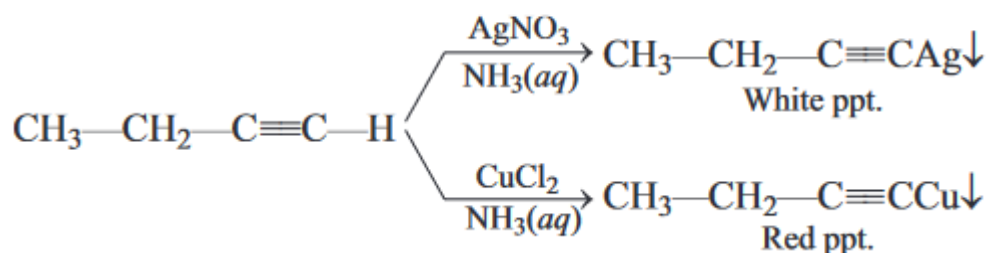
(1).

Alkynes on treatment with alkali metals in liquid ammonia gives *trans* hydrogenation product:



(2)

1-butyne (terminal) can be distinguished from 2-butyne (internal) by either Tollen's test or through Fehling's test.

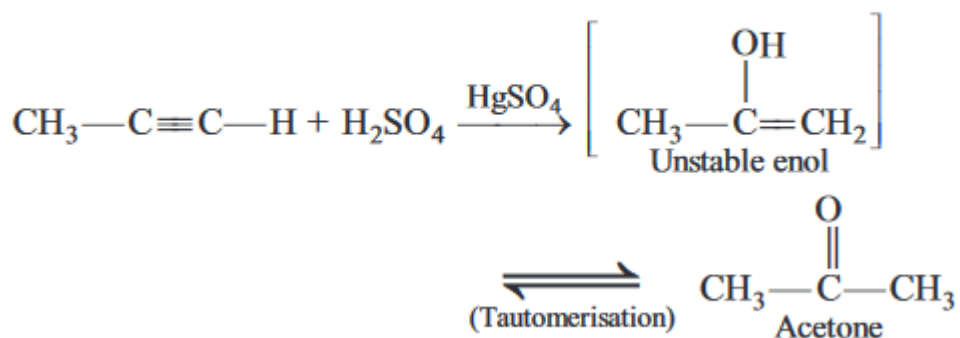


(3)

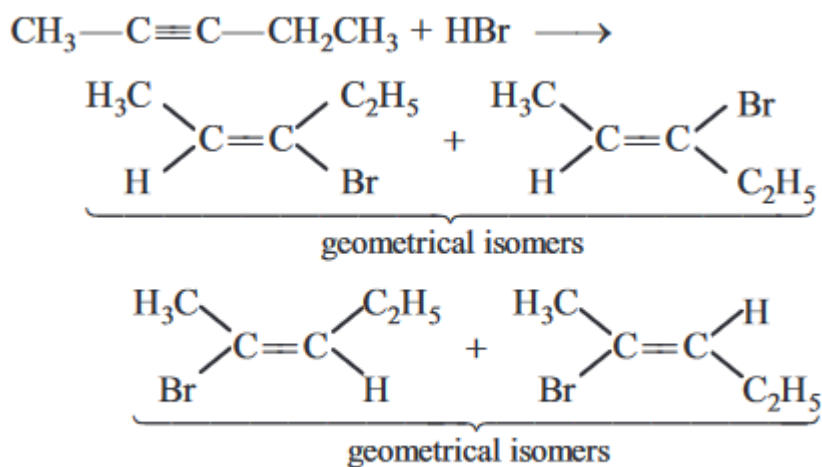
Terminal alkyne (ethyne) is most acidic among these.

(4)

Alkynes undergo Markownikoff's addition of water in the presence of  $\text{H}_2\text{SO}_4 / \text{HgSO}_4$  :



(5)



Therefore, two structural and four configurational isomers.