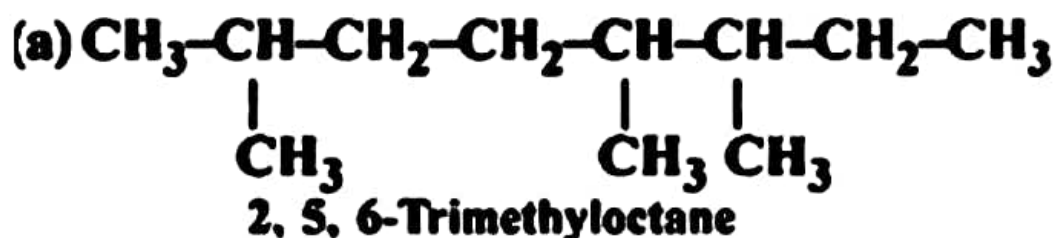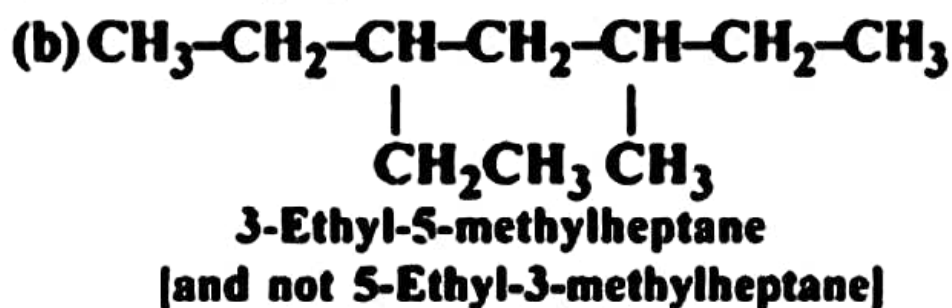Q) Structures and IUPAC names of some hydrocarbons are given below: Explain why the names given in the parentheses are incorrect:

(a) $CH_3-CH-CH_2-CH_2-CH-CH-CH_2-CH_3$
　　　　　|　　　　　　　　|　|
　　　　CH_3　　　　　CH_3 CH_3

2, 5, 6-Trimethyloctane

[and not 3, 4, 7-Trimethylocatane]

(b) $CH_3-CH_2-CH-CH_2-CH-CH_2-CH_3$
　　　　　　　　|　　　　|
　　　　　　CH_2CH_3 CH_3

3-Ethyl-5-methylheptane

[and not 5-Ethyl-3-methylheptane]

Ans)

(a) Sum of the locant = 2 + 5 + 6=13 Sum of the locant = 3 + 4 + 7= 14 Lowest locant number 2, 5, 6 is lower than 3, 4, 7

(b) Substituents are in equivalent position, therefore lower number is given to the one that comes first in the name according to alphabetic order.