Q) Write IUPAC names of the following compounds:
 (i) (CH<sub>3</sub>)<sub>3</sub> C CH<sub>2</sub>C(CH<sub>3</sub>)<sub>3</sub>
 (ii) (CH<sub>3</sub>)<sub>2</sub> C(C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>
 (iii) tetra-tert-butyl methane

(i)



2, 2, 4, 4-Tetramethylpentane

(*ii*) 
$$CH_3 - C - C_2H_5 \equiv CH_3 - C - CH_2 - CH_3$$
  
 $| \\ C_2H_5 = CH_3 - C - CH_2 - CH_3$   
 $| \\ CH_2 - CH_3$ 

3, 3-Dimethylpentane



3, 3-Di-tert-butyl-2, 2, 4, 4-tetramethylpentane

Q) Write structures for each of the following compounds. Why are the given names incorrect? Write correct IUPAC names:

- (i) 2-Ethylpentane
- (ii) 5-Ethyl-3-methylheptane

(i) The structure of 2-Ethyl pentane is:

$$\begin{array}{ccc} CH_3 - CH & -CH_2 - CH_2 - CH_3 \\ & | \\ C_2H_5 \end{array}$$

Largest chain is of six carbon atoms and not that of five:

$$CH_{3} - CH_{2} - CH_{2} - CH_{2} - CH_{3}$$

$$CH_{3} - CH_{2} - CH_{2} - CH_{3}$$

$$CH_{2} - CH_{2}$$

$$CH_{2} - CH_{3}$$

$$CH_{3}$$

$$CH_{3}$$

$$CH_{3} - CH_{3}$$

$$CH_{3} - CH_{3}$$

(ii) Structure of 5-Ethyl-3-methylheptane is:

$$\begin{array}{cccc} CH_3 - CH_2 - CH & - CH_2 - CH_2 - CH_3 \\ & & | \\ CH_3 & & C_2H_5 \end{array}$$

Numbering is to be started from the end which gives the lowest number to ethyl group

$$\begin{array}{c} 7 & 6 & 5 & 4 & 3 & 2 & 1 \\ CH_3 - CH_2 - CH & -CH_2 - CH_2 - CH_2 - CH_3 \\ | \\ CH_3 & | \\ CH_5 \\ \end{array}$$
3-Ethyl-5-methylheptane (correct name)