

Answer on Question#75683 – Chemistry – General chemistry

Question:

calculate the no. of normal modes of vibration for the following compounds:

i) H₂O

CH₄

ii) HBr

Solution:

Compound	Linear or not	Formula for the number of vibrational modes ($N = \text{number of atoms in compound}$)	Answer
H ₂ O	Not	$3N - 6 = 9 - 6$	3
CH ₄	Not	$3N - 6 = 15 - 6$	9
HBr	Linear	$3N - 5 = 6 - 5$	1

Answer:

3 normal modes of vibration for H₂O

9 normal modes of vibration for CH₄

1 normal mode of vibration for HBr