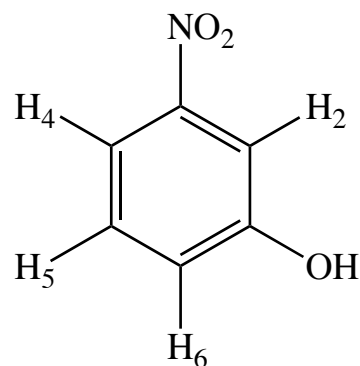


Exercise 58 - Non n+1 coupling

Question

Below is the aromatic region of the 400 MHz proton NMR spectrum of a nitrophenol. Analyze the coupling patterns to determine the substitution pattern.

The coupling constants can be measured by recalling that 0.14 ppm equals 40 Hz on a 400 MHz instrument.



H₄ - double, double, doublet J = 7, 1, 2 Hz, one ortho and two meta neighbours, deshielded by nitro.

H₂ - Triplet, J = 2 Hz, two meta neighbours

H₅ - Triplet, J = 7 Hz, two ortho neighbours

H₆ - double, double, doublet J = 7, 2 Hz, one ortho and two meta neighbours, shielded by OH.

