1. Predict the major product in the reaction below and provide a complete mechanism that accounts for its formation. The mechanism must show movement of electrons with curved arrows, any non-zero formal charges, and all intermediates. Identify the electrophile in this reaction and include its formation in your mechanism. (4 points)

\[ \text{NITRONIUM ION (N}_2^+ \text{)} \]
\[ \text{ELECTROPHILE} \]

\[ \text{\text{H}_2\text{SO}_4} \]

2. Provide the missing product or products (if more than one is expected). (1 point each)

3. Draw the resonance structures of the arenium ion intermediate that results from bromination at the para position of aniline.