

Please show all equations, all substitutions, all units, and all work to receive any credit

1. Drug A has a lower potency than drug B which has a lower potency than drug C. Drug B is a partial agonist while drugs A and C are full agonists.
 - a. On the same graph, plot and clearly label dose-response curves for all three of these drugs. Clearly show the respective doses at which each of these drugs would have 50% of their respective maximum biological effects.
 - b. Clearly explain what exactly is meant by potency.
 - c. Clearly explain what is meant by efficacy.
2. Explain how an inverse agonist works and what effect it has on the receptor.
3. Draw the skeletal structure for a steroid molecule and fully itemize and explain the sequence of steps involved in the mechanism of actions for steroids.
4. For each of the neurotransmitters below, draw the complete Lewis structure of the predominant form at physiological pH; with the exception of aromatic rings, show all bonds, all atoms and all lone pairs of electrons:
 - a. Dopamine
 - b. GABA