Pharmacodynamic:

Receptor: is biologic molecules found in or on the cell and produce an effect when bind with ligand

D+R chemical and physical changes response (beneficial or toxic).

Target of Drug :
1- Enzyme:
e.g./dihydrofolate reductase is the target of Trimethoprim (prevent formation of tetrahydrofolate)
Acetylcholinesterase is the target of Neostigmine
2-Protein:
As nucleic acid
Dactinomycin (prevent transcription)
Enter between guanine - cytosine base of DNA then interfere with DNA dependant RNA polymerase and production of new enzyme. Also affect DNA synthesis (b
3- ion channel:
Blocker eg/ diltiazem Ca++ channel blocker

Modulater diazepam alter Cl- ion channel in GABA receptor
Local anesthetic Na+ channel

4- receptor:
There are 4 types of receptor
As epinephrine , histamine, serotonin, ...ect.

The types of bonds:
1-elecrostatic
2-hydrogen
3-vander waals
They are weak bonds so the binding was reversible
4-covalent bonds (strong so the binding is irreversible)
Eg/ Phenoxybenzamine
Achesteras inhibitors (organo-phosphorus compound)
size, shape and charge of drug determine the type of bonds.

Potency: is the minimum concentration that produce fifty percent of response (EC50)
Affinity of drug for receptor is the main factor that affect potency.

Efficacy: (Emax)
Is ability of drug to produce maximum effect or response.
Depend on number of drug-receptor complex

Agonist: substances that bind with receptor and produce maximum response that mimic the response of endogenous ligand

Phenylephrine agonist to Alfa one receptor it gives maximum effect as done by nor epinephrine at Alfa one receptor.

Partial agonist:
Substance that bind with receptor but not induce maximum effect even all receptor
occupied