**Research assignment: “How Drugs Alter Neurotransmission”**

Name and date submitted (3 pts):

Using this handout as a TEMPLATE, create space in between problems below and write or type your answers. KEEP THE SAME NUMBERING!

(5 questions, 20 points each, 100 points possible)

Resources:

1. Review the PowerPoint slides, ‘How Drugs Effect Neurotransmission’
2. Read the National Institutes of Health article, “Drugs Change the Way Neurons Communicate”.
3. Do Internet research on “how drugs effect nervous system” or “how drugs alter synapse” or “synaptic mechanism of drugs” and so forth.

Questions: Provide well thought-out answers, using complete sentences. Use your own words.

1. Cocaine
2. How does cocaine affect dopamine neurotransmission?
3. Specifically how does the blocking action affect dopamine levels?
4. What is the effect on the postsynaptic (downstream) neuron?
5. Methamphetamine
6. How does meth affect dopamine neurotransmission?
7. Explain the blocking action of meth on reuptake pumps.
8. Meth also acts in another way to alter neurotransmission. See if you can find out how.
9. Nicotine
10. How does nicotine interfere with dopamine neurotransmission in the brain?
11. How does it cause the presynaptic (upstream) neuron to release more neurotransmitter?
12. How does this affect the activity of the postsynaptic (downstream) neuron?
13. Alcohol
14. How does the presence of alcohol affect neurotransmission?
15. The mechanism is a little complicated, but see if you can explain how alcohol affects GABA activity. How does GABA reduce/inhibit neural activity? Try to use your own words in explaining this.
16. Morphine and Heroin (Opioids)
17. What is the mechanism for these drugs?
18. How do they affect the synapse? What do they mimic?
19. What is their effect on the downstream neuron?