Chose the best answer, there is only ONE answer to each question

1. Depression is a psychoneurotic disorder marked especially by sadness and the action of antidepressants takes several weeks. Many hypotheses had been suggested in order to understand this disease. Reserpine was found to interact with storage vesicles and deplete noradrenalin and 5-HT in CNS and PNS. From the above information about depression which of the following statement about depression is correct:
    a. Depression may have a biochemical basis.
    b. Depression is caused by reduced biogenic amines.
    c. Over expression and upregulation of serotonin receptors play a role in the etiology of the disease.
    d. The reduction of brain-derived neurotrophic factor has a significant role in the depression.
    e. All of the above.
2. A 29 yr old man is brought to the emergency room. He is accompanied by his wife, who states that he hasn't been himself for the past few months. He was extremely happy, romantic and active more than any time before for a couple of week. Then he became sad, inactive, sleep too much and feels hopelessness for a couple of week. This patient has:
    a. Major depression.
    b. Bipolar I disorder.
    c. Postpartum depression.
    d. Depression with Psychotic Features.
    e. All of the above.
3. The treatment of the patient in the previous question should include:
    a. Imipramine.
    b. Lithium.
    c. Amitriptyline.
    d. Fluoxetine.
    e. None of the above.
4. The following statements about MAO inhibitors are correct EXCEPT:
    a. MAO inhibition enhances tyramine sympathomimetic effect.
    b. May cause hypotension.
    c. Moclobemide is a selective MAO-B inhibitor.
    d. May cause hypertension due to an interaction with tyramine containing foods.
    e. Phenelzine inhibits both MAO-A and MAO-B enzymes.
5. A 40 year old woman was sent to the hospital because she attempted suicide by ingesting a large dose of imipramine. She complained of a marked excitement, delirium, convulsion and pronounced atropine-like effects. Which of the following drugs should be used to control the main CNS toxicity in this case?
    a. Physostigmine.
    b. Phenytoin.
    c. Naloxone.

d. Amitriptyline.
e. None of the above.

6. The following statements about the action of tricyclic antidepressants are correct:
    a. Tricyclic antidepressants increase transmitter release indirectly by blocking presynaptic α2-adrenoceptors.
    b. Tricyclic antidepressants inhibit noradrenaline and 5-HT uptake by brain synaptosomes to a similar degree but have much less effect on dopamine uptake.
    c. Tricyclic antidepressants affect one or more types of neurotransmitter receptor, including muscarinic acetylcholine receptors, histamine receptors and 5-HT receptors.
    d. b and c.
    e. All of the above.
7. The improvement of emotional symptoms of depression reflects mainly an enhancement of:
    a. Noradrenergic transmission.
    b. 5-HT-mediated transmission.
    c. Glutamate-mediated transmission.
    d. Gabergic transmission.
    e. None of the above.

8. Amitriptyline should not be given with:
    a. NSAIDs.
    b. Anticoagulants.
    c. Antihypertensive drugs.
    d. MAO inhibitors.
    e. All of the above.
9. Iproniazid increases the contents of noradrenalin as well as other amines in the brain and peripheral tissues such as heart, liver and intestine. Noradrenalin is well known to increase the blood pressure (hypertension). However, one side effect of iproniazid is hypotension. This hypotension is due to:
    a. High protein binding to albumin.
    b. An interaction between iproniazid and noradrenalin leads to increase the excretion and metabolism of noradrenalin.
    c. A displacement of noradrenaline from the storage vesicles by dopamine.
    d. a and b.
    e. b and c.
10. The therapeutic approaches of Parkinson's disease include:
    a. Increase the concentration of dopamine.
    b. Decrease the metabolism of dopamine.
    c. Increase the release of dopamine.
    d. Activate the receptors of dopamine.
    e. All of the above.
11. To reduce the peripheral side effects of levodopa:
    a. A combination of levodopa and catechol-O-methyl transferase should be used.

b. A combination of levodopa and dopa decarboxylase should be used.
c. A combination of levodopa, carbidopa and/or entacapone should be used.
d. All of the above.
e. None of the above.

12. The following statements about "on-off" effect are correct:
    a. This on-off effect is characterized by a sudden hypokinesia and rigidity.
    b. This on-off effect is not seen in untreated patients with levodopa.
    c. This effect indicates that, as the disease advances, the ability of neurons to store dopamine is lost.
    d. The use of sustained-release preparations, or co-administration of COMT inhibitors, may be used to counteract the fluctuations in plasma concentration of levodopa.
    e. All of the above.
13. *1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine* or (MPTP) causes irreversible destruction of nigrostriatal dopaminergic neurons. MPTP acts by being converted to a toxic metabolite by the enzyme MAO-B. MPTP appears to be selective in destroying nigrostriatal neurons and does not affect dopaminergic neurons elsewhere. Which of the following drugs can be used to prevent MPTP-induced neurotoxicity by blocking its conversion to a toxic metabolite:
    a. Selegiline.
    b. Moclobemide.
    c. Pergolide.
    d. a and b.
    e. b and c.
14. Although amphetamine increases the activity in normal subject, it decreases the activity in attention deficit/hyperactivity disorder (ADHD) patients. This effect of amphetamine is called:
    a. Synergistic.
    b. Paradoxical.
    c. Antagonistic.
    d. Additive.
    e. None of the above.
15. How does amphetamine work?
    a. Bind to the presynaptic membrane of dopaminergic neurons and induce the release of dopamine from the nerve terminal.
    b. Bind to the dopamine reuptake transporter, causing it to act in reverse and transport free dopamine out of the nerve terminal.
    c. Interact with dopamine containing synaptic vesicles, releasing free dopamine into the nerve terminal.
    d. Bind to monoamine oxidase in dopaminergic neurons and prevent the degradation of dopamine, leaving free dopamine in the nerve terminal.
    e. All of the above.