CATUC CA-Neuropharmacology (2012-2013)

DIRECTIONS: For each of the following questions, choose the single right answer.

(1) .Beta-blockers cause (a) nausea (b) hypertension (c) postural hypotension (d) sweating (e) vomiting.

(2). The rate limiting enzyme in the synthesis of dopamine is: (a) DOPA decarboxylase. (b) Dopamine b hydrolase. (c) Tyrosine hydroxylase. (d) Tyrosine decarboxylase. (e) DOPA hydrolase.

(3) The control centers of the ANS are located in the (a) cerebral cortex (b) medulla oblongata (c) Reticular formation (d) hypothamus (d) b and d above are correct.

(4) . The subthalamic neurons, which project to the output structures of the basal ganglia, are: (a) Gabaergic (b) Glutamatergic (c) Dopaminergic (d) Cholinergic (e) Serotonergic .

(5) The division of the autonomic Nervous essential for life is (a) enteric NS (b) parasympathetic division (c) sympathetic division (d) somatic division (e) ganglionic division.

(6). Which of these compounds are NOT used for treatment of Parkinson's disease? (a) MAO inhibitors (b) COMT inhibitors (c) D_2 receptor agonists (d) D_2 receptor antagonists (e) Dopamine transporter blockers..

(7) The cranial nerve that supplies the eye is (a) X (b) III (c) IX (d) VII (e) XI

(8). The symptoms of Parkinson's disease are associated with an excessive: (a) Inhibition of thalamo-cortical neurons. (b) Excitation of thalamo-cortical neurons. (c) Inhibition of subthalamic neurons. (d) Dopaminergic transmission. (e) Inhibition of the output structures of the basal ganglia.

(9). An adrenergic agonist can be a (a) noncatecholamine (b) catecholamine (c) sympathomimetic (d) all of the above answers (e) None of these answers;

(10) . Heroin was often included in many patient medications available in the latter part of the 19th century and early part of the 20th century, leading to dependence by many. Studies of addiction to heroin during this period indicated that the largest number dependent on heroin was found in: (a) Young males. (b) Older males. (c) Older females. (d) Younger females. (e) Equal use in males and females.

(11) . Although drug dependence exists without physical dependence, the severity of physical dependence, determined by withdrawal signs and symptoms, is most severe and dangerous to life with which of the following? (a) Alcohol (b) Heroin (c) Cocaine (d) Hallucinogens such as PCP (angel dust) (e) Amphetamine.

(12). Clinical application of anticholinesterases is in the treatment of (a) postural hypertension (b) hypertension (c) glaucoma (d) Nausea (e) headache.

(13) . Most recent research has concluded that the critical neurotransmitter or neuropeptide and brain areas involved in the rewarding effects of abuse substances are: (a) Dopamine and the substantia nigra. (b) Norepinephrine and the nucleus accumbens. (c) Endorphins and the locus coeruleus. (d) Dopamine and the nucleus accumbens. (e) Dopamine and the hippocampus.

(14). The following drug is a muscarinic receptor agonist (a) pilocarpine (b) neostigmine (c) hyoscine (d) carbachol (e) atropine.

(15). Benzodiazepines can be distinguished from barbiturates because of the following characteristics: (a) Benzodiazepines increase the duration of channel openings while barbiturates increase channel frequency. (b) Barbiturates have a high therapeutic index, directly open the GABAA receptor channel, and induce P450 enzymes. (c) Overdose from benzodiazepines can be effectively treated by administration of the benzodiazepine antagonist, flumazenil, while there is no antidote for barbiturate overdose. (d) Benzodiazepines have a low therapeutic index, low abuse liability, and few drug interactions. (e) Benzodiazepines and barbiturates have a high abuse liability.

(16). A major problem in the treatment of anxiety disorders is the development of tolerance to longterm treatment. Tolerance can be reduced by which therapeutic regimen? (a) The use of diazepam instead of alprazolam (b) Combination therapy of a partial benzodiazepine modulator with a full modulator (c) Scheduled interruptions in drug treatment (d) Removal of drug therapy followed by treatment with barbiturates (e) Use of short-acting benzodiazepines and partial modulators at the benzodiazepine site.

(17) Transmission in the varicosity is (a) cholinergic (b) noradrenergic (c) neuromuscular (d) neuroelectrical (e) neuronal.

(18). The majority of drugs being prescribed today for the treatment of anxiety disorders are: (a) Barbiturates and tranquilizers. (b) Phenothiazines and benzodiazepines. (c) Benzodiazepines and partial agonists acting at a receptor for serotonin. (d) Benzodiazepines and serotonin reuptake inhibitors. (e) Benzodiazepines and other anxiogenic drugs.

(19) Ephedrine is used clinically to treat (a) headache (b) nasal congestion (c) anxiety disorders (d) epilepsy (e) depression.

(20). The anxiolytic effect of benzodiazepines results from: (a) Their affinity for 5HT1A receptors (b) Their ability to decrease the EC50 of GABA with respect to GABAA receptor mediated chloride influx (c) Their noncompetitive interaction with GABA at the GABAB receptor (d) Their ability to increase the maximum inhibitory effect of GABA (e) Their allosteric modulation of the GABAA receptor indicated by a shift of the GABA concentration-response curve to the right.

(21). The major mechanism of terminating the usual interaction of dopamine with its receptors in the CNS is: (a) Biotransformation by monoamine oxidase in the synapse. (b) Uptake into glia by a transporter blocked by cocaine. (c) Uptake by a postsynaptic membrane transporter coupled to Na,K ATPase. (d) Reuptake by an energy dependent, electroneutral, high affinity transport process that can transport amphetamine. (e) Reuptake by a unidirectional presynaptic transporter that can move dopamine into the presynaptic terminal but not carry it outward.

(22) Glutamate is (a) an excitatory neurotransmitter (b) an inhibitory neurotransmitter (c) exogenous drug (d) all of the above (e) none of the above.

(23) . Which of the following correctly matches a CNS stimulant with its probable site of action: (a) Nicotine: agonist at G protein-coupled ion channel that is selective for anions (b) Caffeine: antagonist at adenosine receptors (c) Amphetamine: direct acting agonist at dopamine receptors (d) Methylxanthines: antagonist at dopamine receptors (e) Cocaine: presynaptic vesicular release of dopamine.

(24). Which of the following most closely matches CNS stimulants with chemical class: (a) Nicotine: synthetic quaternary ammonium compound (b) Caffeine: pyrimidine (c) Cocaine: acetylcholine-like ester (d) Amphetamine: catecholamine (e) Nicotine: methylxanthine.

(25). The abuse liability is greatest with: (a) Caffeine (b) Cocaine (c) Benzodiazepines (d) Aspirin (e) Marijuana.

(26). Analgesic agents are primarily distinguished from anesthetic agents in that: (a) Analgesics are administered orally and anesthetics by intravenous injection. (b) Analgesics primarily act directly at synapses in the spinal cord, whereas anesthetics act in the brain. (c) Anesthetics are more selective for inhibition of Ad and C fibers than are analgesics. (d) Analgesics are more selective for inhibition of the sensation of pain, relative to other sensory modalities. (e) Analgesics have a lower therapeutic index than anesthetics.

(27). Receptors which mediate the primary effects of opioids are: (a) Presynaptic transporters of amines. (b) Membrane proteins activated by endogenous peptides. (c) Enzymes which convert arachidonic acid to prostaglandins. (d) Proteins referred to as NMDA and AMPA. (e) Proteins which are present in the brain but not the spinal cord.

(28). Aspirin is preferred to morphine for treatment of pain, because it is LESS likely to cause all of the following, EXCEPT: (a) Constipation. (b) Peptic ulcer and bleeding. (c) Sedation. (d) Tolerance. (e) Symptoms on withdrawal because of physical dependence.

(29). The rate of onset of anesthesia from a drug like nitrous oxide or isoflurane is primarily determined by: (a) The speed of the intravenous injection. (b) The degree of solubility of the agent in blood (blood/gas solubility coefficient). (c) The MAC of the drug. (d) The rate of conversion to its active metabolite. (e) The rate of conversion of liquid particles in the alveolus to the gaseous form.

(30). A reduction of blood supply to the brain or spinal cord: (a) Is of little importance because of the extensive collateral circulation present in nervous tissue. (b) Is of little importance if the ischemic episode lasts for no more than 30 minutes. (c) Reduces neural activity as nervous tissue is highly dependent upon aerobic metabolism, thus causing a stroke. (d) Initiates a process of excitotoxic cell death by triggering the release of neuropeptide toxins (e) Initiates a process of excitotoxic cell death by causing the release of glutamate.