Total Question: 100 QAs

1. Heroin is commonly abused in all but one of the following ways:

a. Sniffing/snorting

b. Swallowing Correct

c. Smoking

d. Injection

Swallowing. Although oral ingestion of heroin will produce a psychoactive effect, the bioavailability is only about 35%, and the protracted period of assimilation will not produce the intense "rush" valued by abusers. Until recently, injecting heroin into a vein ("mainlining") was the most common method of abuse, with subcutaneous injections ("skin-popping") and intramuscular injections used if veins collapsed, etc. Now, with increased drug purity, the drug is more commonly smoked (as "black tar" heroin) and snorted (in crystalline powdered form). Irregular, recreational heroin use (called "chipping") typically occurs via "snorting."

2. Common health conditions associated with heroin abuse include all but one of the following:

a. Vascular collapse; abscesses

b. Respiratory and cardiac depression

c. HIV infection (with needle sharing); heart infections; liver disease

d. Retinopathy and glucose absorption impairment Correct

Retinopathy and glucose absorption impairment. Although primary health changes brought about by heroin abuse may lead to a great variety of secondary ailments (including those presented here), these two conditions are not normally associated primarily (i.e., proximally) with heroin abuse. Illicitly obtained heroin is often "cut" (diluted) with other substances. When the cutting agent is insoluble, clots and occlusions may result. Withdrawal symptoms may set in within hours, peak within 48–72 hours, and last about a week and include muscle and bone pain, restlessness, cravings, and vomiting. Overdose is characterized by respiratory and/or cardiac depression, convulsions, coma, and death.

3. **Drugs of abuse may be grouped into pharmacological classes such as: 1) alcohol (beer, wine, liquor); 2) cannabis (marijuana, hashish); 3) depressants (benzodiazepines, barbiturates); 4) hallucinogens (LSD, mescaline/peyote); 5) narcotics (heroin, methadone, opium); and 6) stimulants (amphetamines, MDMA/Ecstasy). Please indicate below the proper pharmacological category for cocaine (including the free-based form, crack cocaine):**

a. Depressant

b. Hallucinogen

c. Narcotic

d. Stimulant Correct

Stimulant. In 1914, with the Harrison Drug Act, cocaine was erroneously classified, in the eyes of the law, as a narcotic (i.e., grouped with opium-derived depressants; see also the Controlled Substances Act of 1970). This legal designation was never revised, thus, identifying cocaine as a narcotic would be legally correct. However, pharmaceutically and psychoactively, cocaine is a stimulant; therefore, this would be the most correct answer, from an abuse and rehabilitation perspective. Cocaine in its various forms is currently the most common illicitly used drug in the United States. Typically called simply "coke," street names include: flake, snow, toot, blow, nose candy, lady, liquid lady (cocaine combined with alcohol), speedball (cocaine combined with heroin), and, in free-base form for smoking, it may be called crack, rock, hard, iron, cavvy, and 'base).

4. **The most correct definition of a narcotic is:**

a. Any psychoactive drug that dulls the senses, has anesthetic properties, induces sleep, and, in excess, produces stupor, coma, or death Correct

b. Any legally restricted psychoactive drug, whether physiologically addictive and narcotic or not

c. A group of strong pain medications that block opioid pain receptors

d. A class of depressant drugs derived from opium or compounds related to opium

Any psychoactive drug that dulls the senses, has anesthetic properties, induces sleep, and, in excess, produces stupor, coma, or death. Although the term is commonly associated with the opioids (morphine, heroin, etc.) and is often used by law enforcement and others to refer to any government-controlled psychoactive substance, neither of these definitions is sufficient. Many experts suggest that the term remains ineffectually defined. Common high-potency (and usually injected) narcotics include heroin, morphine, fentanyl, and meperidine (Demerol®), while low-potency prescription medications such as codeine, propoxyphene, and oxycodone (OxyContin® or—when coformulated with acetaminophen—Endocet ®, Percocet®, Roxicet®, Tylox®, etc.) come primarily in pill form. All are used to treat pain. In case of overdose, the opiate antagonist naloxone (Narcan®) can be used to displace narcotic drugs from receptor sites, thereby reversing the potentially lethal respiratory-suppressant effects common with opiates.

5. **Opiates are able to rapidly cross the blood-brain barrier to produce a euphoric rush, and physical dependence develops rapidly when opiates are used regularly. Withdrawal symptoms include all but one of the following:**

a. Nausea and diarrhea

b. Aphasia and echolalia Correct

c. Irritability and restlessness

d. Diaphoresis and chills ("cold sweats")

Aphasia and echolalia—meaning, respectively, the inability to use and/or understand language and the involuntary repetition of words just spoken by others. Other withdrawal symptoms include: anxiety, piloerection ("goosebumps," causing hair to stand up), insomnia, convulsions, tremor, difficulty urinating, constipation, dizziness, mood changes, blood disorders, rashes, abdominal cramps, blurred vision, and vomiting. The excess ingestion of opiates can result in cardiac irregularities (chiefly bradycardia—slowed heart rate) and/or respiratory depression (bradypnea—reduced breathing rate). Significant overdose, or combining opiates with other central nervous system (CNS) depressants such as alcohol, can ultimately lead to asystole (cessation of the heart beat) and/or outright apnea (cessation of breathing) and death.

6. **Opiates are central nervous system (CNS) depressants, as is alcohol (ethanol or ethyl alcohol, as opposed to rubbing alcohol, i.e., isopropanol or isopropyl alcohol). All of the following entries identify CNS depressants except one:**

a. Chloral hydrate and glutethimide

b. Barbiturates and methaqualone

c. Nandrolone and stanozolol Correct

d. Anxiolytics and benzodiazepines

Nandrolone and stanozolol, which are both performance-enhancing anabolic-androgenic steroids. Pharmaceutical depressants have long been called "downers," due to their calming down effects. Prescription uses include the relief of tension, anxiety, and irritability. The potential for abuse is high if used regularly, as physiological tolerance often quickly develops. Moderate overdose can result in poor motor coordination, slurred speech, and impaired judgment, whereas more toxic levels may result in respiratory failure, coma, and death.

7. **Standard portions of the alcoholic beverages, beer, wine, and distilled spirits, as expressed in ounces (oz) are, respectively:**

a. 10 oz, 4 oz, and 1 oz

b. 12 oz, 5 oz, and 1.5 oz Correct

c. 16 oz, 6 oz, and 2 oz

d. 18 oz, 7 oz, and 3 oz

12 oz, 5 oz, and 1.5 oz. Standard portions of alcoholic beverages are arranged so as to provide approximately equal amounts of total alcohol in each type of drink. Beer contains approximately 3.5–9% alcohol, table wines range from 9% to 12%, dessert ("fortified") wines range from 16% to 20%, and distilled ("hard") liquor averages 40–50% and up to 80% in fortified distillates. Once ingested, approximately 20% of the alcohol is absorbed through the stomach and 80% through the intestines. However, greater concentrations of alcohol and carbonated beverages accelerate absorption, and food in the stomach will reduce the rate of absorption. Alcohol is eliminated from the system via the kidneys (5%), the lungs (5%), and the liver (90%).

8. **The liver breaks down alcohol by oxidization into acetic acid. On average, the liver of a 150-pound person can oxidize about 7 grams of pure alcohol per hour. This is the equivalent of how many ounces of beer, wine, and distilled spirits, respectively?**

a. 4.75–5 oz, 1 oz, 0.25 oz

b. 15.75–16 oz, 5.75 oz, 2 oz

c. 11.5–12 oz, 4.5 oz, 1.25 oz

d. 7.75–8 oz, 2.5 oz, 0.75 oz Correct

7.75–8 oz, 2.5 oz, .75 oz. The effects of alcohol intoxication (imbibing faster than the body can metabolize the alcohol) include the earliest symptoms: impaired judgment and decreased inhibition; moderate symptoms (0.01–0.30% blood alcohol): reduced control over movement, speech, and vision; more severe symptoms (0.15–0.35% blood alcohol): impaired balance, coordination, and reflexes. Blood alcohol concentration (BAC, usually given as g%, or grams of ethanol per 100 grams of blood) of 0.08% is considered intoxicated in most states. A blood alcohol of 0.35% and above can result in death, depending upon the body's level of developed tolerance. Impaired reaction time, motor control, and sensory processing are all factors that contribute to the dangers of drunk driving (which kills about 16,000 people each year in the United States).

9. **Excessive alcohol consumption can damage virtually every organ system in the human body. Alcoholism is a major cause of all but one of the following:**

a. Pulmonary disease Correct

b. Hepatic disease

c. Cardiac disease

d. Pancreatitis

Pulmonary disease. Although high levels of alcohol consumption can lead to respiratory depression, respiratory arrest, and suffocation due to emesis (vomit) aspiration, chronic alcoholism is not a leading cause of pulmonary disease. However, alcohol abuse is the number-one cause of liver-related deaths in the United States. Cirrhosis (fibrous scarring) of the liver routinely occurs with chronic alcoholism. Women are particularly prone to injury when more than 2–3 drinks a day are consumed regularly. Alcohol is metabolized by two liver enzymes: alcohol dehydrogenase (which converts alcohol to acetaldehyde) and acetaldehyde dehydrogenase (which converts acetaldehyde to acetic acid). Hepatic encephalopathy (compromised brain function from high levels of toxins in the blood due to poor liver function) can also occur. Acute alcohol toxicity can also damage heart muscle (cardiomyopathy), inflame the pancreas (pancreatitis), induce gastrointestinal ulcers and bleeding, produce a 10-fold greater risk of esophageal cancer, predispose an individual to other kinds of cancer, and may lead to hypertension. Alcohol is the leading cause of cardiomyopathy in the United States.

10. **The use of some drugs (whether legal or illegal) can produce withdrawal symptoms if the dosage is stopped or reduced too quickly. The presence of withdrawal symptoms indicates that the individual has developed one of the following:**

a. An addiction to the drug

b. A physical dependence on the drug Correct

c. A tolerance for the drug

d. An aversion to the drug

A physical dependence on the drug. Physical dependence indicates only that the body has integrated a drug in such a way that withdrawal symptoms will result from cessation, a reduced dose, or administration of an antagonist drug. By contrast, addiction is a psychoneurobiological disease and typically involves physical dependence on a drug as well as one or more of the following: 1) inability to control use of the drug; 2) compulsive use of the drug; 3) continued use of the drug in spite of mental, physical, and/or social harm; and/or 4) craving for the drug. In addition to pain medications, many other legal drugs, including corticosteroids, beta blockers, antidepressants, alcohol, etc., can produce physical dependence. Drug tolerance refers to a drug's lower effectiveness as the body adapts and overcomes the influence of the drug; sensitization occurs when a drug's effects are magnified with continued use.

11. Per reports, alcohol abuse and alcoholism tend to be most prevalent in which of the following groups?

a. College students

b. Teenagers

c. People in poverty

d. Men, as opposed to women Correct

Men, as opposed to women. According to reports, alcoholism occurs twice as often in males as in females. It should be noted that there is ongoing research into the possibility that these numbers are skewed because women are less likely to seek treatment for alcoholism and are therefore not appropriately represented in these numbers. Although alcoholism afflicts people of all demographic categories, those who begin drinking at age 14 or under are much more likely to develop alcoholism. One in every 13 U.S. adults is alcohol dependent or abuses alcohol. Alcohol abusers drink approximately half of all the alcohol consumed in the United States, and the socioeconomic and health costs have reached $100 billion annually. In terms of preventable diseases, alcoholism ranks third in the United States, and 5% of all U.S. deaths are due to alcohol abuse (about 100,000 people annually).

12. The need to drink increasing amounts of alcohol to obtain a "buzz" (i.e., feel intoxicated) is referred to as:

a. Abuse

b. Dependence

c. Addiction

d. Tolerance Correct

Tolerance. The two main types of tolerance are: 1) metabolic tolerance (the liver's increased production of the enzyme alcohol dehydrogenase, causing rapid alcohol metabolism); and 2) functional tolerance (reduced sensitivity to alcohol's effects). Alcohol abuse refers to any harmful use of alcohol. Irregular abusers may not have symptoms of tolerance or dependence. The American Psychiatric Association refers to alcoholism as alcohol dependence—defined as a 12-month period during which one or more of the following is evident: 1) the abuse impairs home, occupational, and/or educational obligations; 2) the use occurs in physically hazardous situations (such as driving); 3) the use resulted in legal problems; 4) the use continues in spite of recurring social or interpersonal problems related to alcohol use.

13. Identify the entry that is not a behavioral sign of alcoholism:

a. Focusing on a single brand or type of alcoholic beverage and drinking increasing amounts to obtain the same effect

b. Being aware of a compulsion or craving for alcohol; determining to quit drinking, but not being able to stop; drinking to reduce a hangover or to stop motor tremors

c. Drinking only hard spirits Correct

d. Experiencing withdrawal symptoms after a short period of abstinence; limiting friends and social activities to those that involve alcohol

Drinking only hard spirits. Many individuals conclude that they do not have a drinking problem because they only drink beer or low-alcohol table wines. However, even low-alcohol drinks can induce dependence and tolerance and can result in withdrawal symptoms at times when alcohol is not imbibed. Therefore, a definition of alcoholism that focuses on only drinkers of hard (distilled) alcoholic beverages would fall far short of including all of the 14 million individuals who abuse and/or are dependent on alcohol.

14. All of the following are categories of sedative-hypnotic drugs except one:

a. Anticonvulsants Correct

b. Barbiturates

c. Minor tranquilizers

d. Nonbarbiturate sedatives

Anticonvulsants. Although some sedative-hypnotic medications are used in the treatment of seizure disorders (e.g., pentobarbital (Nambutal®), phenobarbital (Solfoton®, Luminal®), and secobarbital (Seconal®), many anticonvulsants are not, as not all of them have effective anticonvulsant properties. Similarly, not all sedative-hypnotics have anesthetic properties, although many do. Sedative medications induce a slowing of activity, agitation, and excitement, whereas hypnotic medications are soporific, i.e., sleep-inducing. In truth, however, this distinction is rather arbitrary, as many drugs in this class are sedating at low doses and hypnotic at higher doses. Many sedative-hypnotics reduce anxiety (anxiolysis), and all can produce unconsciousness at sufficiently high doses. There are three major categories of sedative-hypnotics: 1) barbiturates, 2) nonbarbiturate sedatives, and 3) the minor tranquilizers (principally, benzodiazepines). Benzodiazepines and the newer imidazopyridine drugs are commonly used for treatment of anxiety and insomnia. Fortunately, they also have a "ceiling effect" (as they can only augment GABA (gamma-aminobutyric acid) neurotransmitter activity, rather than mimic it outright, as others do) and therefore present limited danger of fatal overdose.

15. All of the following are sedative-hypnotic drugs with the exception of one:

a. Pentobarbital

b. Ethanol (alcohol)

c. Diethylpropion Correct

d. Triazolam

Diethylpropion, an amphetamine (stimulant). Alcohol (ethanol) does fall in the sedative-hypnotic category. Sedative-hypnotic medications are abused for their intoxicating, tension-relieving, anxiolytic, and hypnotic (sleep-inducing) effects. Other undesirable short-term (15 hours or less) effects include: emotional lability, loss of simple body functions, slurred speech, and cognitive and memory impairment. Long-term effects include loss of coordination, vertigo, chronic fatigue, sexual dysfunction, impaired reflexes, breathing disturbances, and menstrual irregularities. Long-term use also induces not only physiological dependence and tolerance, but psychological dependence (a need for the drug in order to function and cope). Withdrawal symptoms include: anxiety, insomnia, agitation, seizures, and even death.

16. Benzodiazepines are routinely prescribed for all but one of the following conditions:

a. Malingering Correct

b. Anxiety

c. Acute stress reactions

d. Panic attacks

Malingering. Benzodiazepines with substantial sedating qualities (e.g., estazolam [ProSom®] or triazolam [Halcion®]) are frequently prescribed for brief treatment of sleep disorders. Higher doses produce a sense of euphoria, but tolerance readily develops over time. As CNS depressants, benzodiazepines promote the action of the neurotransmitter gamma-aminobutyric acid (GABA). Typical effects include changes in emotion, personality, muscle tone, level of consciousness, coordination, etc. Long-term use leads to depression, personality changes, aggression, and feelings of fatigue, along with cognitive changes (impaired memory; mostly problems creating and accessing long-term memory), psychomotor impairment (e.g., problems driving), personality changes, and passivity.

17. **The class of frequently abused drugs that produces feelings of euphoria, dramatically boosts self-confidence, and generates a feeling of super strength is called:**

a. Hallucinogens

b. Stimulants Correct

c. Inhalants

d. Performance enhancers

Stimulants. Hallucinogenic drugs are used for the enhanced sensorial effects they produce. Inhalants are used to induce euphoria, hallucinations, and fantasies. Performance enhancers build muscle. None of these provides all of the identified enhancements generated through the use of stimulants. Signs of stimulant intoxication include nervousness, hyperactivity, pressured speech, difficulty standing or sitting still, decreased inhibition, poor concentration, becoming easily confused, and poor ability to judge distance and time. The duration of intoxication may range from five minutes to several hours, depending upon the stimulant used.

18. **The euphoric high experienced by cocaine users is the result of:**

a. The release of neurotransmitters that stimulate the brain's pleasure center

b. A cascade of neuro-synaptic linkages in the brain triggered by cocaine

c. The adrenalin rush experienced when natural epinephrine is released by cocaine

d. The prolonged presence of dopamine in the brain when reabsorption is prevented by cocaine Correct

The prolonged presence of dopamine in the brain when reabsorption is prevented by cocaine. Dopamine is a chemical messenger in the brain that functions in conjunction with the brain's reward system. Cocaine interferes with the process by which dopamine is reabsorbed and thereby prolongs and enhances pleasure. Chronic cocaine abusers lose the ability to feel the effects of natural reward stimulation in the brain (e.g., by food, sensory stimulation, sex, etc.) and must eventually rely on the drug to stave off depression and experience any sense of physiological reward.

19. Cocaine, in either a powder form (cocaine hydrochloride salt) or in a free-base form is commonly taken into the body in all but one of the following ways:

a. Intranasally (sniffing/snorting)

b. Sublingually (placed under the tongue) Correct

c. Intravascularly (by needle injection)

d. Pulmonarily (by smoking)

Sublingually. Cocaine powder (cocaine hydrochloride) can be inhaled into the nasal passages (called snorting or sniffing), where it is rapidly assimilated into the bloodstream. When dissolved in water, cocaine powder can be injected intravenously. When heated to free the pure cocaine from the hydrochloride base, the end product has a much lower burning point than cocaine in its salt form (i.e., cocaine hydrochloride). Therefore, when burned, the cocaine will sublimate (i.e., transform directly from a solid to a gas, as opposed to a liquid to gas transition) into a vapor, which can then be inhaled. Intravenously injected and smoked cocaine each enters the bloodstream virtually at the same rate and can produce a high in less than 10 seconds.

20. What does the term "free-base" mean when used in reference to cocaine?

a. A more unstable form of the drug

b. A more corrosive form of the drug

c. A more pure form of the drug

d. All of the above Correct

All of the above. Free-base cocaine (a base, or nonacidic alkaloid) is less stable than cocaine hydrochloride (a chemical salt), and it is also more corrosive—both of which make it harder to transport and store. However, it is also more pure, offering the user a more intense high. There are two forms of free-base cocaine (although the term free-base usually refers only to the purer version of the two). When cocaine hydrochloride is mixed with baking soda (sodium bicarbonate) and water and is then heated to free the pure cocaine from the hydrochloride base, the end product is called crack cocaine. When ammonia and ether are used, the result is a much purer product commonly called free-base cocaine, because one contains residual baking soda, whereas the other has no such residue. Both crack and free-base cocaine have much lower burning points than cocaine hydrochloride. Consequently, when heated, the cocaine vapor can be inhaled. Crack is less expensive to produce and buy, is intensely addictive, and was particularly popular in the mid-1980s.