

STUDY GUIDE – ANSWERS

5: States of Consciousness

Introduction

1. consciousness; behavior
2. brain activity; cognition

Consciousness is our awareness of ourselves and our environment.

Sleep and Dreams

1. biological rhythms
2. circadian rhythm
3. rises; fall
4. thinking; memory
5. bright light; retinas; suprachiasmatic nucleus; pineal; melatonin
6. will
7. five
8. eyes; dreams; REM sleep
9. alpha
10. hypnagogic; hallucinations; memories
11. sleep spindles
12. delta; 3; 4; slow-wave; difficult; sleepwalking

During REM sleep, brain waves become as rapid as those of Stage 1 sleep, heart rate rises and breathing becomes more rapid and irregular, and genital arousal and rapid eye movements occur.

13. active; relaxed; paradoxical
14. dream; emotional
15. 90; briefer; longer; 20 to 25
16. two-thirds; one-third
17. genes; identical; culture; less
18. 9
19. 8 or 9; 2; Dement; ghrelin; leptin; cortisol; immune; aging; hypertension; memory impairment; accidents

The major effect of sleep deprivation is sleepiness. Other effects include impaired creativity, concentration, and communication; slowed performance; and irritability.

20. protect; brain; metabolism; free radicals; neurons; memory; creative
21. pituitary; less; less
22. insomnia; reduce Tips for promoting healthy sleep include exercising during the day, avoiding caffeine after early afternoon and rich foods before bedtime, sleeping on a regular schedule, and relaxing before bedtime.
23. narcolepsy; REM; muscular tension; orexin
24. sleep apnea; overweight men
25. night terrors; 4; sleepwalking; sleeptalking; run; young children; lengthiest; deepest
26. REM
27. negative; attacked, pursued, or rejected, or of experiencing misfortune
28. manifest; latent content
29. erotic; conflicts; safety valve

31. REM; memory
32. physiological; stimulation; infants
33. neural; brainstem; activation-synthesis; limbic; limbic; amygdala; maturation; cognitive
34. need; REM rebound
35. does; do not; information-processing

Hypnosis

1. social interaction
2. somewhat

Those who are most susceptible frequently become deeply absorbed in imaginative activities. They also tend to have rich fantasy lives.

3. age regression
4. fact; fiction
5. authoritative; context
6. posthypnotic
7. is; is not
8. can
9. medication; sooner; earlier
10. normal consciousness; social influence The behavior of hypnotized subjects is not fundamentally different from that of other people. Therefore, hypnosis maybe mainly a social phenomenon, with hypnotized subjects acting out the role of a “good hypnotic subject.”
11. dissociation; sensory; emotional; attention The social influence and divided consciousness views work together to explain hypnosis as an extension both of normal principles of social influence and of everyday dissociations between our conscious awareness and our automatic behaviors.

Drugs and Consciousness

1. psychoactive
 2. tolerance; neuroadaptation
 3. withdrawal; dependence; psychological; addicted
- The following myths about addiction are false:
- a. Taking a psychoactive drug automatically leads to addiction.
 - b. A person cannot overcome an addiction without professional help.
 - c. The addiction-as-disease-needing-treatment model is applicable to a broad spectrum of pleasure-seeking behaviors.
4. depressants; stimulants; hallucinogens; neurotransmitters; expectations
 5. calm; slow; depressant; sympathetic
 6. aggressive; helpful; sexually; long-term; REM sleep
 7. shrinking; women; self-awareness; immediate; future; impulse control

Studies have found that if people believe that alcohol affects social behavior in certain ways, then, when they drink alcohol (or even mistakenly think that they have been drinking

vary by culture. For example, if people believe alcohol promotes sexual feeling, on drinking they are likely to behave in a sexually aroused way.

8. barbiturates
9. depress; opiates; endorphins
10. caffeine; nicotine; amphetamines; cocaine; Ecstasy; methamphetamine; are
11. dopamine; energy; mood
12. smoking; early adolescence; do; nicotine; do; nicotine-withdrawal; craving, insomnia, anxiety, and irritability
13. epinephrine; norepinephrine; appetite; alertness; mental efficiency; central nervous; dopamine; opioids; anxiety; pain
14. dopamine; serotonin; norepinephrine; reuptake (reabsorption); synapses
15. expectations; personality; situation
16. Ecstasy; stimulant; mild hallucinogen; dopamine; serotonin; serotonin; circadian; immune system; memory; cognitive
17. psychedelics; MDMA; serotonin; blocking
18. hallucinations; oxygen
19. THC

Like alcohol, marijuana relaxes; disinhibits, and may produce a euphoric feeling. Also like alcohol, marijuana impairs perceptual and motor skills. Unlike alcohol, marijuana is a mild hallucinogen; it can amplify sensitivity to colors, sounds, tastes, and smells. Marijuana also interrupts memory formation. Its by-products remain in the body for a month or more.

20. negative aftereffects; tolerance; withdrawal
21. increased; drug education
22. biological; identical twin; more; dopamine reward

A psychological factor in drug use is the feeling that one's life is meaningless and lacks direction. Regular users of psychoactive drugs often have experienced stress or failure and are somewhat depressed. Drug use often begins as a temporary way to relieve depression, anger, anxiety, or insomnia. A powerful social factor in drug use, especially among adolescents, is peer influence. Peers shape attitudes about drugs, provide drugs, and establish the social context for their use.

23. varies; cultural; ethnic
24. lowest; peer
25. a. education about the long-term costs of a drug's temporary pleasures
b. efforts to boost people's self-esteem and purpose in life
c. attempts to "inoculate" youths against peer pressures

Progress Test 1

Multiple-Choice Questions

1. d. is the answer. (p. 176)
2. b. is the answer. (p. 177)
 - a. The amygdala is an emotion center in the limbic system.
 - c. NPY is a brain chemical that has been found to be reduced in rats who prefer alcohol to water.
 - d. The pineal is a gland that produces the sleep-inducing hormone melatonin.
- b. & c. Delta waves predominate during Stages 3 and 4. Stage 3 is the transition between Stages 2 and 4 and is associated with a pattern that has elements of both stages.
- d. Faster, nearly waking brain waves occur during REM sleep.
5. d. is the answer. (pp. 180-181) a., b., & c. During non-REM Stages 1-4 heart rate and breathing are slow and regular and the genitals are not aroused.
6. d. is the answer. (p. 181)
7. d. is the answer. (pp. 183-184)
8. a. is the answer. Like alcohol, sleeping pills carry the undesirable consequence of reducing REM sleep and may make insomnia worse in the long run. (p. 186) b., c., & d. Sleeping pills do not produce these effects.
9. c. is the answer. They also block the reuptake of serotonin and norepinephrine. (p. 204)
 - a. This answer describes the effect of LSD.
 - b. Depressants such as alcohol have this effect. Cocaine and crack are classified as stimulants.
 - d. None of the psychoactive drugs has this effect. Opiates, however, suppress the brain's production of endorphins.
10. d. is the answer. Alcohol, which slows body functions and neural activity, is a depressant. (p. 199)
 - a. Methamphetamine is a stimulant.
 - b. & c. LSD and marijuana are hallucinogens.
11. b. is the answer. (p. 202)
12. c. is the answer. (p. 196)
 - a. Hypnotized subjects usually perform only acts they might perform normally.
 - b. The text does not suggest that sleeping and hypnosis are the same states. In fact, the brain waves of hypnotized subjects are not like those associated with sleeping.
 - d. Hypnosis typically disrupts, or contaminates, memory.
13. c. is the answer. They remembered less than if they were awakened during other stages. (pp. 189-190)
14. a. is the answer. Freud saw dreams as psychic safety valves that discharge unacceptable feelings that are often related to erotic wishes. (p. 189)
 - b. & c. These physiological theories of dreaming are not associated with Freud.
 - d. According to Freud, dreamIs represent the individual's conflicts and wishes but in disguised, rather than transparent, form.
15. c. is the answer. Such drugs work primarily at synapses, altering neural transmission. (p. 197)
 - a. What people believe will happen after taking a drug will likely have some effect on their individual reactions, but psychoactive drugs actually work by altering neural transmission.
 - b. Because a placebo is a substance without active properties, this answer is incorrect.
 - d. This answer is incorrect because the effects of psychoactive drugs on behavior, perception, and so forth have a physiological basis.
16. c. is the answer. This is true. Heredity, for example, influences tendencies toward alcohol dependence. (pp. 198, 208)
17. b. is the answer. (p. 175)
 - a. The behaviorists' emphasis on observable behavior

c. Psychology has never been primarily concerned with abnormal behavior.

18. d. is the answer. (pp. 189-191) a., b., & c. Each of these describes a valid theory of dreaming that was mentioned in the text.
19. c. is the answer. We can reset our biological clocks by adjusting our sleep schedules. Thus, young adults adopt something closer to a 25-hour day by staying up too late to get 8 hours of sleep. (p.178)

Matching Items

- | | | |
|---------------|----------------|----------------|
| 1. d (p. 188) | 6. k (p. 187) | 11. c (p. 179) |
| 2. j (p. 189) | 7. b (p. 199) | |
| 3. h (p. 180) | 8. a (p. 206) | |
| 4. i (p. 178) | 9. e (p. 204) | |
| 5. g (p. 187) | 10. f (p. 186) | |

Progress Test 2

Multiple-Choice Questions

1. b. is the answer. Following REM deprivation, people temporarily increase their amount of REM sleep, in a phenomenon known as REM rebound. (p. 191)
- a. Just the opposite is true: The amount of REM sleep is greatest in infancy.
- c. Deprived of REM sleep by repeated awakenings, people return more and more quickly to the REM stages after falling back to sleep. They by no means adapt easily to the deprivations.
- d. Just the opposite occurs: They tend to suppress RE-1 sleep.
2. a. is the answer. Alcohol disrupts the processing of experiences into long-term memory but has little effect on either immediate or previously established memories. (p. 199)
3. d. is the answer. (p. 178)
- a. The brain waves of REM sleep (dream sleep) are more like those of Stage 1 sleepers.
- b. Stage 2 is characterized by sleep spindles.
- c. Stages 3 and 4 are characterized by slow delta waves.
4. c. is the answer. (p. 177)
5. a. is the answer. (p. 197)
- b. Physical dependence may occur in the absence of tolerance. The hallmark of physical dependence is the presence of withdrawal symptoms .when the person is off the drug.
- c. Psychological dependence refers to a felt, or psychological, need to use a drug, for example, a drug that relieves stress.
- d. There is no such thing as drug "resistance."
6. d. is the answer. (p. 186)
7. a. is the answer. (p. 180)
- b. During REM sleep, muscular tension is low.
- c. Night terrors are associated with Stage 4 sleep.
- d. Alpha waves are characteristic of the relaxed, awake state.
8. d. is the answer. Alcohol is a depressant. (p. 199)
9. d. is the answer. (p. 193)
- a. Hypnotic responsiveness varies greatly from person to
- b. & c. There is no evidence of a gender difference in hypnotic responsiveness.
10. c. is the answer. Hilgard believes that hypnosis reflects a dissociation, or split, in consciousness, as occurs normally, only to a much greater extent. (p.195)
11. a. is the answer. Although this is not discussed, the fact that alcohol dependence has a genetic component suggests that compared with other children, children whose parents abuse alcohol have a higher tolerance for multiple drinks, making it more likely that they will, in fact, consume more alcohol. (pp. 208-209)
12. b. is the answer. (p. 194)
- a. & c. Hypnosis can be helpful in treating these problems, but it is no more effective than other forms of therapy.
- d. Adults are not more responsive than children to hypnosis.
13. d. is the answer. If adolescents' friends use drugs, the odds are that they will, too. (p. 209) a., b., & c. These are also predictors of drug use but seem to operate mainly through their effects on peer association.
14. c. is the answer. (p. 206)
15. b. is the answer. (p. 195)
- a. & c. There is no evidence that hypnotically responsive individuals fake their behaviors or that they are underachievers.
16. d. is the answer. (p. 176)
17. b. is the answer. (p. 205)
- a. & c. Unlike stimulants, LSD and THC do not speed up body functions.
- d. Unlike hallucinogens, cocaine is a stimulant and does not generally distort perceptions.
18. a. is the answer. (p. 190)
- b. & c. These essentially Freudian explanations of the purpose of dreaming are based on the idea that a dream is a psychic safety valve that harmlessly discharges otherwise inexpressible feelings.
- d. This explanation of the function of dreaming is associated with the information-processing viewpoint.
19. d. is the answer. (p. 205)

Matching Items

- | | | |
|--------------------|---------------|----------------|
| 1. c (p. 205) | 5. j (p. 178) | 9. a (p. 189) |
| 2. f (p. 201) | 6. k (p. 200) | 10. e (p. 195) |
| 3. d (p. 178) | 7. i (p. 201) | 11. b (p. 204) |
| 4. h (pp. 179-180) | 8. g (p. 176) | |

Psychology Applied

Multiple-Choice Questions

1. b. is the answer. Narcolepsy is characterized by uncontrollable sleep attacks. (p. 186)
- a. Sleep apnea is characterized by the temporary cessation of breathing while asleep.
- c. Night terrors are characterized by high arousal and terrified behavior, occurring during Stage 4 sleep.
- d. Insomnia refers to chronic difficulty in falling or staying asleep.
2. d. is the answer. (p. 210)
3. b. is the answer. Although the body is aroused internally, the messages of the activated motor cortex do not reach the

- a. Studies of REM-deprived people indicate just the opposite.
- c. It is difficult to awaken a person from REM sleep.
- d. Just the opposite occurs in REM sleep: The muscles are relaxed, yet the brain is aroused.
4. a. is the answer. Although people recall more under hypnosis, they "recall" a lot of fiction along with fact and appear unable to distinguish between the two. (p. 193)
- b. Hypnotically refreshed memories are usually no more accurate than conscious memories.
- c. Although the hypnotized subject's imagination may influence the memories retrieved, some actual memory retrieval also occurs.
- d. Hypnotically retrieved memories don't normally focus on anxiety-provoking events.
5. b. is the answer. Continued use of a drug produces a tolerance; to experience the same "high," Dan will have to use larger and larger doses. (p.197)
6. c. is the answer. The rapid eye movements of REM sleep coincide with bursts of activity in brain areas that process visual images. (p. 180)
7. c. is the answer. (p. 209)
8. d. is the answer. Alcohol loosens inhibitions and reduces self-consciousness, making people more likely to act on their feelings of anger or sexual arousal. It also disrupts the processing of experience into long-term memory. (pp. 199-200)
9. b. is the answer. The analyst is evidently trying to go beyond the events in the dream and understand the dream's hidden meaning, or the dream's latent content. (p. 189)
- a. The manifest content of a dream is its actual story line.
- c. Dissociation refers to a split in levels of consciousness.
- d. There is no such term. In any case, "overt" would be the same as "manifest" content.
10. d. is the answer. Because of the phenomenon known as REM rebound, Barry, having been deprived of REM sleep, will now increase his REM sleep. (p. 191)
- a. Increased irritability is an effect of sleep deprivation in general, not of REM deprivation specifically.
- b. REM rebound will cause Barry to dream more than normal.
- c. The increase in REM sleep is necessarily accompanied by decreases in Stages 1-4 sleep.
11. b. is the answer. People with rich fantasy lives and the ability to become imaginatively absorbed have essentially the characteristics associated with hypnotic suggestibility. The fact that Janice is an actress also suggests she possesses such traits. (p. 193)
- a. Bill's reality orientation makes him an unlikely candidate for hypnosis.
- c. The hypnotically suggestible are generally able to focus on tasks or on imaginative activities.
- d. People who are hypnotically suggestible tend to become deeply engrossed in novels and movies.
12. a. is the answer. Adopted individuals are more susceptible to alcohol dependence if they had a biological parent with alcohol dependence. (p. 208) b., c., & d. Each of these is true, which indicates that susceptibility to alcohol
14. c. is the answer. (pp. 190-191)
- a. & d. Increased activity in the visual and auditory areas of the sleeping brain is perfectly normal during REM sleep.
- b. In fact, people cannot easily be awakened from REM sleep.
15. a. is the answer. THC, the active ingredient in marijuana, and its by-products linger in the body for a month or more. (p. 206)
16. b. is the answer. (p. 206)
- a. The hallucinations of a near-death experience are very similar to those of an LSD trip.
- c. & d. The text does not mention a gender difference in the prevalence of near-death experiences.
17. c. is the answer. (p. 195)
18. b. is the answer. (p. 209)
19. d. is the answer. Freud's theory proposed that dreams, which occur during fast-wave, REM sleep, serve as a psychic safety valve. (p. 189)

Essay Question

As a depressant, alcohol slows neural activity and body functions. Although low doses of alcohol may produce relaxation, with larger doses reactions slow, speech slurs, skilled performance deteriorates, and the processing of recent experiences into long-term memories is disrupted. Alcohol also reduces self-awareness and may facilitate sexual and aggressive urges the individual might otherwise resist.

Some people may be biologically vulnerable to alcohol dependence. This is indicated by the fact that individuals who have a biological parent with alcohol dependence, or people who have an identical twin with alcohol dependence, are more susceptible to alcohol dependence.

Stress, depression, and the feeling that life is meaningless and without direction are common feelings among heavy users of alcohol and may create a psychological vulnerability to alcohol dependence.

Especially for teenagers, peer group influence is strong. If an adolescent's friends use alcohol, odds are that he or she will too.

Research suggests three important channels of influence for drug prevention and treatment programs: (1) education about the long-term consequences of alcohol use; (2) efforts to boost people's self-esteem and purpose in life; and (3) attempts to counteract peer pressure that leads to experimentation with drugs.

Key Terms

1. For most psychologists, consciousness is our awareness of ourselves and our environment. (p.176)
2. A circadian rhythm is any regular bodily rhythm, such as body temperature and sleep-wakefulness, that follows a 24-hour cycle. (p. 177)

Memory aid: In Latin, *circa* means "about" and *dies* means "day." A circadian rhythm is one that is about a day, or 24 hours, in duration.

3. REM sleep (rapid eye movement sleep) is the sleep stage in

and vivid dreaming occurs; also known as paradoxical sleep. (p. 178)

Memory aid: REM is an acronym for rapid eye movement, the distinguishing feature of this sleep stage that led to its discovery.

4. Alpha waves are the relatively slow brain waves characteristic of an awake, relaxed state. (p. 178)
5. Sleep is the natural, periodic loss of consciousness, on which the body and mind depend for healthy functioning. (p. 178)
6. Hallucinations are false sensory experiences that occur without any sensory stimulus. (p. 179)
7. Delta waves are the large, slow brain waves associated with deep sleep. (p. 180)
8. NREM sleep (non-rapid eye movement sleep) is the stage of sleep associated with muscular relaxation. It encompasses all sleep stages except REM sleep. (p. 180)
9. Insomnia is a sleep disorder in which the person regularly has difficulty in falling or staying asleep. (p. 185)
10. Narcolepsy is a sleep disorder in which the victim suffers sudden, uncontrollable sleep attacks, often characterized by entry directly into REM. (p.186)
11. Sleep apnea is a sleep disorder in which the person ceases breathing while asleep, briefly arouses to gasp for air, falls back asleep, and repeats this cycle throughout the night. (p. 187)

Example: One theory of the sudden infant death syndrome is that it is caused by sleep apnea.

12. A person suffering from night terrors experiences episodes of high arousal with apparent terror. Night terrors usually occur during Stage 4 sleep. (p.187)
13. Dreams are sequences of images, emotions, and thoughts, the most vivid of which occur during REM sleep. (p. 188)
14. In Freud's theory of dreaming, the manifest content is the remembered story line. (p. 188)
15. In Freud's theory of dreaming, the latent content is the underlying but censored meaning of a dream. (p. 189)

Memory aids for 14 and 15: Manifest means "clearly apparent, obvious"; latent means "hidden, concealed." A dream's manifest content is that which is obvious; its latent content remains hidden until its symbolism is interpreted.

16. REM rebound is the tendency for REM sleep to increase following REM sleep deprivation. (p. 191)
17. Hypnosis is a social interaction in which one person (the hypnotist) suggests to another (the subject) that certain perceptions, feelings, thoughts, or behaviors will spontaneously occur. (p. 192)
18. A posthypnotic suggestion is a suggestion made during a hypnosis session that is to be carried out when the subject is no longer hypnotized. (p. 194)
19. Dissociation is a split between different levels of consciousness, allowing a person to divide attention between two or more thoughts or behaviors. (p.195)
20. Psychoactive drugs-which include stimulants, depressants, and hallucinogens-are chemical substances that alter moods and perceptions. They work by affecting or mimicking the activity of neurotransmitters. (p. 197)
21. Tolerance is the diminishing of a psychoactive drug's effect that occurs with repeated use, requiring progressively larger doses to produce the same effect. (p. 197)
22. Withdrawal refers to the discomfort and distress that follow the discontinued use of addictive drugs. (p. 197)
23. Physical dependence is a physiological need for a drug that is indicated by the presence of unpleasant withdrawal symptoms when the drug is not taken. (p. 197)
24. The psychological need to use a drug is referred to as psychological dependence. (p. 197)
25. An addiction is a compulsive craving for a drug despite adverse consequences and withdrawal symptoms. (p. 197)
26. Depressants are psychoactive drugs, such as alcohol, opiates, and barbiturates, that reduce neural activity and slow body functions. (p. 199)
27. Barbiturates are depressants, sometimes used to induce sleep or reduce anxiety. (p. 200)
28. Opiates are depressants derived from the opium poppy, such as opium, morphine, and heroin; they reduce neural activity and temporarily lessen pain and anxiety. (p. 201)
29. Stimulants are psychoactive drugs, such as caffeine, nicotine, amphetamines, and cocaine, that excite neural activity and speed up body functions. (p. 201)
30. Amphetamines are a type of stimulant and, as such, speed up body functions and neural activity. (p. 201)
31. Methamphetamine is a powerfully addictive stimulant that speeds up body functions and is associated with energy and mood changes. (p.201)
32. Classified as both a synthetic stimulant and a mild hallucinogen, Ecstasy (MDMA) produces short-term euphoria by increasing serotonin levels in the brain. Repeated use may permanently damage serotonin neurons, suppress immunity, and impair memory and other cognitive functions. (p. 205)
33. Hallucinogens are psychedelic drugs, such as LSD and marijuana, that distort perceptions and evoke sensory images in the absence of sensory input. (p. 205)
34. LSD (lysergic acid diethylamide) is a powerful hallucinogen capable of producing vivid false perceptions and disorganization of thought processes. LSD produces its unpredictable effects partially because it blocks the action of a subtype of the neurotransmitter serotonin. (p. 205)
35. The near-death experience is an altered state of consciousness that has been reported by some people who have had a close brush with death. (p.206)
36. The major active ingredient in marijuana, THC is classified as a mild hallucinogen. (p. 206)