

# Chapter Five

## VARIATIONS IN CONSCIOUSNESS

### Review of Key Ideas

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#### ON THE NATURE OF CONSCIOUSNESS

##### 1. Discuss the nature and evolution of consciousness.

- 1-1. The personal awareness of internal and external events is how psychologists define \_\_\_\_\_. Consciousness is like a moving stream in that it is constantly \_\_\_\_\_.
- 1-2. Not only is consciousness constantly changing, it also exists at different levels. Freud believed that at its deepest level we would find the \_\_\_\_\_. Moreover, there is a \_\_\_\_\_ of levels of awareness from the conscious to the unconscious. There (is/is not) some awareness during sleep and even while under anesthesia.
- 1-3. Consciousness must have evolved because it increased the likelihood of survival and reproductive success, perhaps because it allowed for forethought and \_\_\_\_\_. Several other equally plausible explanations have also been offered, but as of now (only one/none) has been supported by empirical evidence.

##### 2. Discuss the relationship between consciousness and EEG activity.

- 2-1. EEG recordings reveal that there (is/is not) some relationship between brain waves and levels of consciousness. There are four principal bands of brain wave activity, based on the frequency of the wave patterns, these are alpha, beta, delta, and theta. Identify these wave patterns from their descriptions given below.
- |                              |                                   |
|------------------------------|-----------------------------------|
| _____ (a) alert (13-24 cps)  | _____ (c) deep sleep (4-7 cps)    |
| _____ (b) relaxed (8-12 cps) | _____ (d) deepest sleep (1-4 cps) |

- 2-2. While variations in consciousness are correlated with variations in brain activity, the causal basis of this relationship remains \_\_\_\_\_.

## BIOLOGICAL RHYTHMS AND SLEEP

### 3. Summarize what is known about our biological clocks and their relationship to sleep.

- 3-1. One of the biological rhythms, the daily or 24-hour circadian rhythm, is influential in the regulation of sleep and wakefulness. This is accomplished through the regulation of several bodily processes, including body temperature. Describe below what happens to body temperature when we:
- (a) begin to fall asleep.
  - (b) continue into deeper sleep.
  - (c) begin to awaken.
- 3-2. There is evidence that exposure to \_\_\_\_\_ is responsible for regulating the 24-hour circadian clock. Sunlight affects the suprachiasmatic nucleus in the hypothalamus, which in turn signals the \_\_\_\_\_ gland. The pineal gland then secretes the hormone melatonin, which is a major player in adjusting biological clocks. Getting out of sync with the circadian rhythm is more likely to occur when the days are (shortened/lengthened).
- ### 4. Explain how people get out of sync with their circadian rhythms and how they can be realigned.
- 4-1. Traveling across time zones, rotating work shifts, and late night shifts can all result in the (alignment/disruption) of circadian rhythms.
- 4-2. One method for realigning circadian rhythms is to take small doses of the hormone \_\_\_\_\_. Research results using this method produce (consistent/inconsistent) results.
- 4-3. Researchers have also tried carefully timed exposure to bright \_\_\_\_\_. The effects using this technique have been modest and (consistent/inconsistent).
- 4-4. Another strategy to help rotating shift workers involves gradually changing their rotation schedules by moving through progressively (earlier/later) starting times.

## THE SLEEP AND WAKING CYCLE

### 5. Compare REM and NREM sleep and describe the nightly sleep cycle.

5-1. Answer the following questions regarding the sleep cycle.

(a) How many stages are there in one sleep cycle?

(b) Which two stages make up slow-wave sleep?

(c) Which brain waves are prominent during slow-wave sleep?

5-2. What particularly differentiates NREM sleep from rapid eye movement sleep, or \_\_\_\_\_ sleep, is that during REM sleep the brain wave pattern resembles that of a person who is wide \_\_\_\_\_. However, REM sleep is actually a fifth stage of sleep in which the muscle tone is extremely relaxed, and the sleeper is virtually \_\_\_\_\_. It is also during REM sleep that vivid \_\_\_\_\_ is most likely to occur.

5-3. The sleep cycle is repeated approximately \_\_\_\_\_ times during an average night of sleep. NREM sleep dominates the early part of the sleep period, but \_\_\_\_\_ sleep and dreaming dominate the later stages of sleep. As one progresses through the night, the depth of NREM sleep tends to progressively (increase/decrease).

### 6. Summarize age trends in patterns of sleep and cultural differences on sleep.

6-1. Not only do newborns sleep more frequently and for more total hours during a day than do adults, they also spend a greater proportion of time in \_\_\_\_\_ sleep. As they grow older, children move toward longer but (more/less) frequent sleep periods, and the total proportion of REM sleep declines from about 50 percent to the adult level of about \_\_\_\_\_ percent. During adulthood there is a gradual shift towards the (lighter/deeper) stages of sleep.

6-2. Answer the following questions regarding sleeping patterns across cultures.

(a) Which pattern, children sleeping with their parents (co-sleeping) or children sleeping alone, is the most widely practiced?

(b) Where are the “siesta” cultures generally located?

(c) What is the effect of industrialization on the practice of siestas?

**7. Discuss the neural and evolutionary basis of sleep.**

- 7-1. Sleep and wakefulness is apparently under the control of several neural structures, but one that appears to be particularly essential for both sleep and wakefulness is the reticular \_\_\_\_\_. When a part of this system, called the ascending \_\_\_\_\_ system (ARAS), is severed in cats, the cats remain in continuous \_\_\_\_\_. When the ARAS is stimulated in normal cats, they act \_\_\_\_\_.
- 7-2. However, many other brain structures and at least five neurotransmitters are also involved in the regulation of sleep. In other words, there (is/is not) a single brain structure that serves as a “sleep center”, and there (is/is not) a single neurotransmitter that serves as a “sleep chemical.”
- 7-3. At least three hypotheses attempt to account for the evolutionary (adaptive) basis of sleep: sleep evolved to conserve energy, it reduces exposure to many sources of danger, and it helps to restore body resources. Which hypothesis has the greater empirical support?

**8. Describe evidence on the effects of sleep restriction, including the chapter’s Featured Study.**

- 8-1. Answer the following questions regarding the effects of different kinds of sleep deprivation.
- (a) While both complete and partial sleep deprivation have a negative effect on mood and also on performance on both cognitive and perceptual-motor tasks, what is rather surprising about the degree of these negative effects?
- (b) In what way might increased sleepiness be a major problem with respect to the workplace?
- 8-2. Answer the following questions regarding the Featured Study.
- (a) Which group showed no cognitive deficits over the course of the study?



- (b) Rank-order the following groups with respect to the amount of decrement in performance, beginning with the least.

Total deprivation	1. _____
Only 4 hours of sleep	2. _____
Only 6 hours of sleep	3. _____

- (c) How aware were the subjects that their sleepiness was interfering with their performance?

## 9. Review the effects of selective sleep deprivation and the health ramifications of sleep loss.

- 9-1. Studies in which subjects were selectively deprived of REM sleep, leaving NREM sleep undisturbed, found (substantial/little) negative effects from REM deprivation. One curious effect that has been noted from selective REM deprivation is that subjects tend to increase their amount of (NREM/REM) sleep when given the first opportunity to do so. This same rebound effect has also been found with stages 3 and 4, or \_\_\_\_\_ - \_\_\_\_\_ sleep.
- 9-2. Research shows that sleep deprivation (may/may not) have serious health consequences.
- 9-3. Research findings correlating habitual sleep time and overall mortality revealed the highest mortality rates among those who sleep \_\_\_\_\_ per night. The lowest mortality rate was found among those who sleep about \_\_\_\_\_ per night.

## 10. Discuss the prevalence, causes, and treatments of insomnia.

- 10-1. While practically everybody will suffer from occasional bouts of insomnia, it is estimated that about \_\_\_\_\_ of adults will suffer from occasional insomnia, and of these about \_\_\_\_\_ will suffer from chronic problems with insomnia. There are three basic types of insomnia, which are easily remembered because one type occurs at the beginning of sleep, one type during sleep, and the third type at the end of sleep. Thus, one type involves difficulty in initially \_\_\_\_\_ asleep; one type involves difficulty in \_\_\_\_\_ asleep; and one type involves persistent \_\_\_\_\_ awakening.
- 10-2. While there are a number of different causes of insomnia, most of them appear to revolve around the anxiety and emotional reactions that result from the \_\_\_\_\_ of everyday living. Also health problems and taking certain \_\_\_\_\_ can be a factor.
- 10-3. As there are many different causes of insomnia, it seems reasonable that there (is/is not) a single form of treatment. However, researchers agree that the most commonly used form of treatment, using sedatives, or \_\_\_\_\_ pills, is not the treatment of choice. Evidence shows that while sleeping pills do promote sleep, they also interfere with both the slow-wave and \_\_\_\_\_ parts of the sleep cycle.

**11. Identify the symptoms of narcolepsy, sleep apnea, night terrors, nightmares, and somnambulism.**

**11-1.** Described below are five different case histories of persons suffering from five different sleep disorders. Make the appropriate diagnosis for each one.

- (a) Throckmorton is a young child who frequently wakes up during the night with a loud piercing cry, but cannot describe what happened to him; he usually returns quickly to sleep. A night spent at the sleep clinic discloses that the episodes generally occur during NREM sleep. Throckmorton is most likely suffering from \_\_\_\_\_.
- (b) Gazelda reports that occasionally, even when typing a term paper or driving a car, she will quickly drop into a deep sleep. The sleep is often accompanied by dreams, which indicates REM sleep. Gazelda is most likely suffering from \_\_\_\_\_.
- (c) Ajax is a young child who frequently wakes up terrified and relates vivid dreams to his parents who rush to comfort him. The family physician tells the parents there is probably nothing to worry about, unless these episodes persist, and that the child will most likely outgrow this problem. The diagnosis here is probably \_\_\_\_\_.
- (d) Mr. Whistletoe will occasionally get up late at night and walk around the house. Unfortunately, Mr. Whistletoe is completely unaware of this behavior and usually returns to bed without awakening. Upon awakening the next morning he is surprised by a new bruise on his leg, and he wonders how the chair in the living room got tipped over. Mr. Whistletoe would be diagnosed as suffering from \_\_\_\_\_, or sleepwalking.
- (e) Henrietta complains that during a night's sleep, she frequently wakes up gasping for breath. A visit to the sleep clinic discloses that, indeed, she does stop breathing for brief periods all through the night. Henrietta undoubtedly suffers from \_\_\_\_\_.

**THE WORLD OF DREAMS**

**12. Discuss the nature of dreams and findings on dream content.**

**12-1.** The conventional view of dreams is that they are mental experiences during REM sleep and often have a bizarre story like quality and vivid imagery. What do many theorists now think of this view?

**12-2.** In what way do non-REM dreams appear to differ from REM dreams?

**12-3.** Calvin Hall, who analyzed the contents of more than 10,000 dreams, concluded that the content of most dreams is (exotic/mundane). Moreover, he found that dreams seldom involve events that are not centered on \_\_\_\_\_. Hall also found that dreams tend to be like soap operas in that they revolve around such common themes as misfortune, \_\_\_\_\_, and \_\_\_\_\_.

**12-4.** Answer the following questions regarding the differences in dream content between men and women. Which sex is more likely to dream about:

\_\_\_\_\_ (a) acting aggressively

\_\_\_\_\_ (b) sex with strangers

\_\_\_\_\_ (c) children

**12-5.** What did Freud mean when he stated that our dreams reflect day residue?

**12-6.** What other factor has an inconsistent effect on our dreams?

### **13. Describe cultural variations in beliefs about the nature and importance of dreams.**

**13-1.** Say which of the following statements about dreams is more characteristic of Western cultures (W) or non-Western cultures (NW).

(a) Little significance paid to the meaning of dreams.

(b) Remembering dreams is important.

(c) Believe that dreams may provide information about the future.

(d) Are likely to report frequent dreams involving food.

### **14. Describe the three theories of dreaming covered in the chapter.**

**14-1.** The text mentions three theories as to why we need to dream. Tell what cognitive purpose, if any, each of these theories proposes as to the purpose of dreaming.

(a) This was Sigmund Freud's theory about the need to dream.

(b) This theory proposed by Rosalind Cartwright is cognizant of the fact that dreams are not restricted by logic or reality.

- (c) The activation-synthesis theory of Hobson and McCarley proposes that dreams occur as side effects of neural activation of the cortex by lower brain centers.

## **HYPNOSIS: ALTERED CONSCIOUSNESS OR ROLE PLAYING?**

### **15. Discuss hypnotic susceptibility, and list some prominent effects of hypnosis.**

- 15-1.** While there are many different hypnotic induction techniques, they all lead to a heightened state of \_\_\_\_\_. Research shows that individuals (do/do not) vary in their susceptibility to hypnotic induction. In fact, approximately \_\_\_\_\_ percent of the population does not respond at all, and approximately \_\_\_\_\_ percent are highly susceptible to hypnotic induction.
- 15-2.** High hypnotizability appears to be made up of three components: absorption, dissociation, and suggestibility. Identify these components:
- (a) The tendency to accept directions uncritically. \_\_\_\_\_
  - (b) The capacity to reduce peripheral awareness and narrow the focus of attention.  
\_\_\_\_\_
  - (c) The ability to separate aspects of perception, memory, or identity from the mainstream of awareness.  
\_\_\_\_\_
- 15-3.** The text lists several of the more prominent effects that can be produced by hypnosis. Identify these effects from their descriptions given below.
- (a) Reducing awareness of pain. \_\_\_\_\_
  - (b) Engaging in acts one would not ordinarily do. \_\_\_\_\_
  - (c) Perceiving things that do not exist or failing to perceive things that do exist. \_\_\_\_\_
  - (d) Claiming that sour foods taste sweet. \_\_\_\_\_
  - (e) Carrying out suggestions following the hypnotic induction session. \_\_\_\_\_
  - (f) Claiming to forget what occurred during the induction session. \_\_\_\_\_

### **16. Explain the role-playing and altered-states theories of hypnosis.**

- 16-1.** A theory of hypnosis proposed by Barber and Orne is that hypnosis is really a form of acting or role-playing in which the subjects are simply playing as if they are hypnotized. What two lines of evidence support this theory?

- 16-2. A theory of hypnosis proposed by Hilgard is that hypnosis does in fact result in an altered state of consciousness. This theory holds that hypnosis results in a dissociation or \_\_\_\_\_ of consciousness into two parts. One half of the divided consciousness communicates with the hypnotist while the other half remains \_\_\_\_\_, even from the hypnotized subject. In this case, pain perceived by the "hidden" part of the consciousness (is/is not) reported to the "aware" part of consciousness. The divided state of consciousness proposed by Hilgard (is/is not) a common experience in everyday life. One such example of this commonly experienced state is appropriately called highway \_\_\_\_\_.
- 16-3. One researcher takes the position that the two theories (are, are not) entirely incompatible. The resolution of this debate, however, remains \_\_\_\_\_.

### MEDITATION: PURE CONSCIOUSNESS OR RELAXATION?

#### 17. Explain the nature of meditation and describe its physiological correlates.

- 17-1. Certain short-term physiological changes may occur during meditation. One of the most prominent of these changes is that EEG brain waves change from the rapid beta waves to the slower \_\_\_\_\_ and theta waves. This change to slower waves is accompanied by (an increase/a decrease) in metabolic activity such as heart rate, oxygen consumption, etc. All of these physiological changes are characteristic of a normal state of \_\_\_\_\_. Recent research with PET and MRI scans indicate that the changes in brain wave patterns seem (likely/unlikely) to be due to simple relaxation effects.

#### 18. Assess the evidence on long-term benefits of meditation.

- 18-1. The claims made for the long-term effects of meditation may have some merit in that some studies have shown that subjects had lower levels of some stress hormones, improved mental health, and reduced anxiety and drug abuse. These changes can (also/not) be induced by other commonly used methods for inducing relaxation. The claim that meditation can produce a unique state of pure consciousness (has/has not) been conclusively proven.

### ALTERING CONSCIOUSNESS WITH DRUGS

#### 19. Identify the major types of abused drugs and why their effects vary.

- 19-1. The text lists six different categories of psychoactive drugs; identify these drugs from the descriptions given below.
- (a) This drug is the most widely used, and abused, of all psychoactive drugs and produces a relaxed euphoria that temporarily boosts self-esteem. Wine and beer are both examples of the drug \_\_\_\_\_.

- (b) While this class of drugs derived from opium is effective at relieving pain, it can also produce a state of euphoria, which is the principal reason that opiates, or \_\_\_\_\_, are attractive to recreational users.
- (c) The drugs in this class, such as LSD, mescaline and psilocybin, are known for their ability to distort sensory and perceptual experiences, which is why they are given the collective name of \_\_\_\_\_.
- (d) The drugs in this class include marijuana, hashish, and THC. Although they vary in potency, each of them can produce a mild and easygoing state of euphoria along with enhanced sensory awareness and a distorted sense of time. This class of drugs gets its name from the hemp plant \_\_\_\_\_ from which they are all derived.
- (e) This class of drugs is known for its sleep inducing (sedation) and behavioral depression effects, resulting in tension reduction and a relaxed state of intoxication. While there are several different drugs in this class, the barbiturates are the most widely abused. Commonly known as "downers", they are more properly called \_\_\_\_\_.
- (f) This class of drugs produces arousal in the central nervous system and ranges from mildly arousing drugs like caffeine and nicotine, to strongly arousing drugs like cocaine and the amphetamines. Known for their ability to produce an energetic euphoria, the drugs in this class go by the name of \_\_\_\_\_.
- (g) This drug, also known as ecstasy, is a compound related to both amphetamines and mescaline and other hallucinogens. It produces a short-lived high.

## 20. Understand how psychoactive drugs exert their effects on the brain.

- 20-1. Psychoactive drugs work primarily by altering neurotransmitter activity between neurons at junctions called \_\_\_\_\_. For example, amphetamines increase the release of DA and NE and they also slow reuptake at DA and NE synapses. Similarly, the drug \_\_\_\_\_ mainly blocks reuptake at DA, NE, and serotonin synapses.
- 20-2. Endorphins, produced naturally by the body, produce an effect very similar to that produced by \_\_\_\_\_ drugs.
- 20-3. Virtually all abused drugs increase activity in the (mesolimbic) pathway, which has been characterized as a "\_\_\_\_\_ pathway."

## 21. Contrast psychological dependence and physical dependence.

- 21-1. When a person must continue taking a drug to avoid withdrawal illness or addiction, \_\_\_\_\_ dependence is said to occur. When a person must continue taking a drug to satisfy intense emotional craving for the drug, then \_\_\_\_\_ dependence is said to occur.

**21-2.** As can be seen in Table 5.3 in the text, the three riskiest drugs in terms of tolerance and physical and psychological dependence are:

**21-3.** What physiological change in the brain appears to facilitate both physical and psychological dependence?

**22. Summarize evidence on the major physical health risks associated with drug abuse.**

**22-1.** What two physical effects were found in the study in which rats were allowed unlimited access to heroin or cocaine, and which drug was the most deadly?

**22-2.** There are three major ways in which drugs may affect physical health. The most dramatic way is when a person takes too much of a drug, or drugs, and dies of an \_\_\_\_\_. Another way is when drug usage directly damages bodily tissue; this is referred to as a \_\_\_\_\_ effect. The third way is when drug usage results in accidents, improper eating and sleeping habits, infections, etc. These effects are collectively called \_\_\_\_\_ effects.

**23. Evaluate controversies related to marijuana and the risks associated with ecstasy.**

**23-1.** Say whether the following statements concerning marijuana are true or false.

- \_\_\_\_\_ (a) Marijuana produces only a slight and insignificant decrease in the immune response.
- \_\_\_\_\_ (b) Marijuana can have lasting effects on a male-smoker's sexual functioning.
- \_\_\_\_\_ (c) Heavy use of marijuana can produce measurable impairments in attention and memory.

**23-2.** Say whether the following statements regarding the long-term use of ecstasy (MDMA) are true or false.

- \_\_\_\_\_ (a) There is evidence linking heavy ecstasy use with sleep disorders, depression, anxiety, or hostility.
- \_\_\_\_\_ (b) There is no evidence linking ecstasy use with subtle effects on cognitive function and memory deficits.



## REFLECTING ON THE CHAPTER'S THEMES

### 24. Identify the five unifying themes that were highlighted in this chapter.

**24-1.** Identify which of the underlying themes (psychology evolves in a sociohistorical context, experience is subjective, cultures mold some aspects of behavior, multifactorial causation, and psychology is theoretically diverse) are illustrated by the following statements:

- (a) Psychologists have followed many different approaches and developed many different theories in their attempt to understand consciousness.
- (b) The study of consciousness by psychologists followed rather than preceded renewed public interest in this topic.
- (c) There are striking individual differences in the way people respond to hypnosis, meditation, and drugs.
- (d) The significance given to dreams and sleep patterns can be influenced by this factor.
- (e) Many of the effects of sleep-deprivation, drug use, etc., depend on a host of interacting factors.

## APPLICATION: ADDRESSING PRACTICAL QUESTIONS ABOUT SLEEP AND DREAMS

### 25. Summarize the evidence on various common questions about sleep.

**25-1.** Answer the following questions about sleep and napping.

- (a) How much sleep do we require?
- (b) While napping can be refreshing for most people, in what way can it prove inefficient?
- (c) Why are drugs such as sedatives and alcohol likely to interfere with refreshing sleep?
- (d) What does evidence show about the effectiveness of attempting to learn complex material, such as a foreign language, during deep sleep?

**25-2.** In addition to developing sensible daytime habits to combat insomnia, there are numerous methods for facilitating actually going to sleep. A common feature in all of them is that they generate a feeling of \_\_\_\_\_. Some methods generate a feeling of boredom, which is akin to relaxation. The important point here is that one (does/does not) ruminate on the heavy events in life when attempting to go to sleep.

## 26. Summarize the practical questions about dreams.

- 26-1. While there are some persons who claim they never dream, what is really happening is that they cannot \_\_\_\_\_ their dreams. Dreams are best recalled when waking occurs during or immediately following (REM/NREM) sleep. Determination and practice (can/cannot) improve one's ability to recall dreams. A dream whose action takes place over a 20-minute period will actually last for approximately \_\_\_\_\_ minutes.
- 26-2. Freud believed that dreams do require interpretation because their true meaning, which he called the \_\_\_\_\_ content, is symbolically encoded in the obvious plot of the dream, which he called the \_\_\_\_\_ content. Freud's theory that dreams carry hidden symbolic meaning would mean that dream interpretation (is/is not) a very complicated affair. More recent researchers now believe that dreams are (more/less) complicated than Freud believed. Calvin Hall makes the point that dreams require some interpretation simply because they are mostly (visual/verbal).
- 26-3. In what way does lucid dreaming differ from regular dreaming?
- 26-4. Indicate whether the following statements are "true" or "false".
- \_\_\_\_\_ (a) There have been several reported cases of persons reporting their own deaths as the result of fatal dreams.
- \_\_\_\_\_ (b) People can often exert some control over events unfolding in lucid dreams.

## CRITICAL THINKING APPLICATION

### 27. Recognize the influence of definitions and understand the nominal fallacy.

- 27-1. Whether alcoholism is a disease or a result of personal failure depends on \_\_\_\_\_ gets to make up the definition. In fact, there is (only one/no) conclusive way to determine if alcoholism is a disease.
- 27-2. To say that someone drinks too much because she is alcoholic is an example of \_\_\_\_\_ reasoning. Definitions can never serve as \_\_\_\_\_ of the thing they are defining; doing so results in the \_\_\_\_\_ fallacy.

## Review of Key Terms

Alcohol  
Ascending reticular activating system (ARAS)  
Biological rhythms  
Cannabis  
Circadian rhythms  
Dissociation  
Electroencephalograph (EEG)  
Electromyograph (EMG)  
Electrooculograph (EOG)  
Hallucinogens

Hypnosis  
Insomnia  
Latent content  
Lucid dreams  
Manifest content  
MDMA  
Meditation  
Narcolepsy  
Narcotics or opiates  
Nightmares  
Night terrors

Non-REM (NREM) sleep  
Physical dependence  
Psychoactive drugs  
Psychological dependence  
REM sleep  
Sedatives  
Sleep apnea  
Slow-wave sleep (SWS)  
Somnambulism  
Stimulants  
Tolerance

1. A device that monitors the electrical activity of the brain.
2. A device that records muscle activity and tension.
3. A device that records eye movements.
4. Periodic fluctuations in physiological functioning.
5. The 24-hour biological cycles found in humans and many other species.
6. Sleep involving rapid eye movements.
7. Sleep stages 1 through 4, which are marked by an absence of rapid eye movements.
8. Consists of the afferent fibers running through the reticular formation that influence physiological arousal.
9. Drugs that are derived from opium that are capable of relieving pain. These drugs are also called narcotics.
10. Involves chronic problems in getting adequate sleep.
11. A disease marked by sudden and irresistible onsets of sleep during normal waking hours.
12. Reflexive grasping for air that awakens a person and disrupts sleep.
13. Abrupt awakenings from NREM sleep accompanied by intense autonomic arousal and feelings of panic.
14. Anxiety arousing dreams that lead to awakening, usually from REM sleep.
15. Occurs when a sleeping person arises and wanders about in deep NREM sleep.
16. A systematic procedure that typically produces a heightened state of suggestibility.
17. Involves a splitting off of mental processes into two separate, simultaneous streams of awareness.
18. A family of medical exercises in which a conscious attempt is made to focus attention in a nonanalytical way.
19. Chemical substances that modify mental, emotional, or behavioral functioning.
20. Sleep stages 3 and 4, in which low-frequency delta waves become prominent in EEG recordings.
21. Drugs that have sleep-inducing and behavioral depression effects.
22. Drugs that tend to increase central nervous system activation and behavioral activity.

- \_\_\_\_\_ 23. A diverse group of drugs that have powerful effects on mental and emotional functioning, marked most prominently by distortions in sensory and perceptual experience.
- \_\_\_\_\_ 24. The hemp plant from which marijuana, hashish, and THC are derived.
- \_\_\_\_\_ 25. A variety of beverages containing ethyl alcohol.
- \_\_\_\_\_ 26. A progressive decrease in a person's responsiveness to a drug.
- \_\_\_\_\_ 27. A condition that exists when a person must continue to take a drug to avoid withdrawal illness.
- \_\_\_\_\_ 28. A condition that exists when a person must continue to take a drug to satisfy mental and emotional craving for the drug.
- \_\_\_\_\_ 29. Freud's term that refers to the plot of a dream at the surface level.
- \_\_\_\_\_ 30. Freud's term that refers to the hidden or disguised meaning of events in a dream.
- \_\_\_\_\_ 31. Dreams in which persons are aware that they are dreaming.
- \_\_\_\_\_ 32. A drug, also known as ecstasy, compounded from both amphetamine and hallucinogens that produces a short-lived high.

## Review of Key People

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Rosalind Cartwright  
William Dement  
Sigmund Freud

Calvin Hall  
Ernest Hilgard

J. Alan Hobson  
William James

- \_\_\_\_\_ 1. Originated the term, "the stream of consciousness".
- \_\_\_\_\_ 2. Argued for the existence of the unconscious and the hidden meaning of dreams.
- \_\_\_\_\_ 3. As one of the pioneers in early sleep research, he coined the term REM sleep.
- \_\_\_\_\_ 4. After analyzing thousands of dreams, he concluded that their contents are generally quite mundane.
- \_\_\_\_\_ 5. Proposes a problem-solving view as a reason for dreaming.
- \_\_\_\_\_ 6. A proponent of the altered state (divided consciousness) theory of hypnosis.
- \_\_\_\_\_ 7. His activation-synthesis model proposes that dreams are only side effects of neural activation.