Chapter Review

Theories of Emotion

1. physiological arousal; expressive behaviors; conscious experience

2. follow

Cannon argued that the body’s responses were not sufficiently distinct to trigger the different emotions and, furthermore, that physiological changes occur too slowly to trigger sudden emotion.

3. cortex; sympathetic; Cannon-Bard

4. physiological; cognitive; Stanley Schachter; Jerome Singer

Embodied Emotion

1. a. Heart rate increases.
   b. Muscles become tense.
   c. The liver pours extra sugar into the bloodstream.
   d. Breathing rate increases.
   e. Digestion slows.
   f. Pupils dilate.
   g. Blood tends to clot more rapidly.
   h. Skin perspires.

2. sympathetic; adrenal; epinephrine (adrenaline); norepinephrine (noradrenaline)

3. parasympathetic

4. similar; fear; anger; sexual arousal

5. fear; rage; finger; hormone

6. fear; joy

7. are; amygdala; angry; depression; right frontal

8. left frontal lobe

9. left; frontal; nucleus accumbens

10. polygraph

The polygraph measures several of the physiological responses that accompany emotion, such as changes in breathing, pulse rate, blood pressure, and perspiration. The assumption is that lying is stressful, so a person who is lying will become physiologically aroused.

11. anxiety

12. innocent; emotions; arousal

13. do not agree

14. guilty knowledge test

15. arousal

16. did not; did

17. fuels; channels

18. can

First, experiments on subliminal perception indicate that although stimuli are not consciously perceived, people later prefer these stimuli to others they have never been exposed to. Second, there is some separation of the neural pathways involved in emotion and cognition.

19. eye or ear; thalamus; amygdala; cognition; cortex

20. Richard Lazarus; appraise

21. interpretations; expectations; memories

It seems that some emotional responses—especially simple likes, dislikes, and fears—involves no conscious thinking. Other emotions are greatly affected by our interpretations and expectations.

Expressed Emotion

1. threats; anger; eyes; mouth; deceiving

2. better; easier

3. e-mail

4. better; lies; literacy; simpler; responsiveness

5. more; smaller; more

6. different

7. the same; display rules; does not vary; are

8. Darwin; interpret; contexts

9. individuality; hide their emotions; social-cultural

10. intensified

11. found

12. facial feedback

13. leads

14. behavior feedback
Experienced Emotion
1. 10; are; combinations
2. valence; pleasant (positive valence); unpleasant (negative valence); arousal
3. adaptive
4. learning (conditioning)
5. observing
The fact that humans quickly learn and slowly unlearn to fear snakes, spiders, and cliffs—fears that were presumably very useful to our ancestors—suggests that these are biologically predisposed fears that develop with little or no learning.
6. amygdala; limbic; remember; emotional
7. hippocampus; emotional reaction; will not
8. amygdala
9. phobias; experience; genes
10. willful; unjustified; avoidable
11. individuality; catharsis; interdependence; Tahiti; Japan
12. a. Retaliation must be directed against the person who provoked the anger.
   b. Retaliation must be justifiable.
   c. The target of the retaliation must not be someone who is intimidating.
One problem with expressing anger is that it breeds more anger, in part because it may trigger retaliation. Expressing anger can also magnify anger and reinforce its occurrence.
13. a. Wait to calm down.
   b. Deal with anger in a way that involves neither chronic anger nor sulking.
14. forgave
15. safer; healthier
16. more; feel-good, do-good
17. subjective well-being
18. rise; is gone by
19. regain
20. overestimate; underestimate
21. do not
22. remained almost unchanged
23. intimacy, personal growth, and contribution to the community; wealth
24. adaptation-level
If we acquire new possessions, we feel an initial surge of pleasure. But we then adapt to having these new possessions, come to see them as normal, and require other things to give us another surge of happiness.
26. relative deprivation; slightly more
27. high self-esteem; satisfying marriage or close friendships; meaningful religious faith; optimistic outgoing personality; good sleeping habits and regular exercise; having work and leisure that engage our skills
28. age; gender; education; parenthood; physical attractiveness
29. 50

Stress and Health
1. behavioral medicine; health
2. stimulus; response; process
3. appraise; both positive and negative
4. Cannon; epinephrine (adrenaline); norepinephrine (noradrenaline); sympathetic; fight or flight
5. hypothalamus; pituitary; adrenal glands; glucocorticoid; cortisol
6. tend and befriend; seek and give support
7. general adaptation syndrome
8. alarm; sympathetic
9. resistance
10. exhaustion; more
11. telomeres; DNA; chromosomes; divide
12. psychological disorders such as depression and anxiety
13. more
14. daily hassles; racism; hypertension
15. coronary heart disease; smoking, obesity, high-fat diet, physical inactivity, elevated cholesterol level
16. cholesterol; clotting; stress
Type A people are competitive, hard-driving, super-motivated, impatient, time-conscious, verbally aggressive, and easily angered. Type B people are more relaxed and easygoing. In the Friedman and Rosenman study, heart attack victims came overwhelmingly from the Type A group.
17. negative emotions; the anger associated with an aggressively reactive temperament
18. Type A; cholesterol
19. pessimism; pessimists; optimists
20. increases
21. psychophysiological
22. hypertension; headaches; stress
23. psychosomatic; unreal
24. psychoneuroimmunology
24. cyclical; allergies; spontaneous remission; placebo
25. religion; medicine; together
26. predicts
Religiously active people have healthier life-styles. 
They also tend to have stronger networks of social 
support and are more likely to be married.

Progress Test 1

Multiple-Choice Questions

1. c. is the answer. (p. 532)
   a. & b. Researchers have not identified such personality types.
   d. Individuals who are more easygoing are labeled Type B.

2. c. is the answer. (p. 500)
   a. The somatic division of the peripheral nervous system carries sensory and motor signals to and from the central nervous system.
   b. The peripheral nervous system is too general an answer, since it includes the sympathetic and parasympathetic divisions, as well as the somatic division.
   d. The parasympathetic nervous system restores the body to its unaroused state.

3. c. is the answer. Although many emotions have the same general body arousal, resulting from activation of the sympathetic nervous system, they appear to be associated with different brain circuits. (p. 501)

4. b. is the answer. (p. 498)
   a. This expresses the two-factor theory.
   c. This expresses the James-Lange theory.
   d. This theory was not discussed.

5. c. is the answer. (p. 530)
   a. & b. During these stages, the body’s defensive mechanisms are at peak function.
   d. This is not a stage of the GAS.

6. c. is the answer. Coronary heart disease is followed by cancer, stroke, and chronic lung disease. AIDS has not yet become one of the four leading causes of death in North America among the general population. (p. 532)

7. d. is the answer. The finding that people whose brains can’t sense the body’s responses experience considerably less emotion in fact supports the James-Lange theory, which claims that experienced emotion follows from the body’s responses. (p. 498)
   a., b., & c. All these statements go counter to the theory’s claim that experienced emotion is essentially just an awareness of the body’s response.
8. c. is the answer. (p. 504)

9. c. is the answer. The men who received epinephrine without an explanation felt arousal and experienced this arousal as whatever emotion the experimental confederate in the room with them was displaying. (p. 503)
   a. Epinephrine recipients who expected arousal attributed their arousal to the drug and reported no emotional change in reaction to the confederate’s behavior.
   b. & d. In addition to the two groups discussed in the text, the experiment involved placebo recipients; these subjects were not physically aroused and did not experience an emotional change.

10. d. is the answer. Education level, parenthood, gender, and physical attractiveness seem unrelated to happiness. (p. 526)

11. c. is the answer. (p. 518)
   a. This would not be an example of catharsis because catharsis involves releasing, rather than suppressing, aggressive energy.
   b. Expressions of anger in such a situation tend to cause the person anxiety and thus tend not to be effective.
   d. One danger of expressing anger is that it will lead to retaliation and an escalation of anger.

12. d. is the answer. These are the three components of emotions identified in the text. (p. 498)

13. c. is the answer. If the suspect becomes physically aroused while answering questions about details only the perpetrator of the crime could know, it is presumed that he or she committed the crime. (p. 504)

14. b. is the answer. (p. 511)
   a. The opposite is true; relevant facial muscles are hard to control voluntarily.
   c. Authentic facial expressions tend to fade within 4 or 5 seconds.
   d. Facial expressions are generally universal; many gestures vary from culture to culture.

15. c. is the answer. Both fear and joy increase heart rate but stimulate different facial muscles. (p. 501)

16. d. is the answer. (p. 523)

17. b. is the answer. (p. 520)
   a., c., & d. Research studies have not found these factors to be related to altruistic behavior.

18. d. is the answer. (p. 512)

19. d. is the answer. (p. 520)

20. c. is the answer. (pp. 503–504)
   a. & b. These answers imply that cognition always precedes emotion.

21. a. is the answer. (p. 534)
   b. Catharsis refers to the release of emotion.
   c. Psychogenic means “originating in the mind.” One’s reaction to stress is partially psychological, but this term is not used to refer to stress-related illness.
   d. There is no such term in psychology.

22. d. is the answer. Because stress depresses the immune system, stressed individuals are prone to all of these conditions. (p. 535)

23. c. is the answer. (p. 528)
   a., b., & d. Whether an event is stressful or not depends on how it is appraised.

24. a. is the answer. (p. 538)
   b. In emotion-focused coping, we attempt to alleviate stress by avoiding or ignoring it.
   c. This is an example of coping rather than managing stress because it involves an attempt to actually alleviate a stressor.
   d. Catharsis refers to the release of emotion.

25. c. is the answer. The finding that talking about grief leads to better health makes a lot of sense in light of this physiological finding. (p. 542)
   a., b., & d. The study by Pennebaker did not find these to be true.

26. d. is the answer. Regular aerobic exercise has been shown to increase ability to cope with stress, lower blood pressure, and reduce depression and anxiety. The text does not cite evidence that exercise enhances immune function. (pp. 543–544)

27. d. is the answer. (p. 530)

28. b. is the answer. (p. 540)

29. d. is the answer. (p. 548)
   b. & c. The text does not indicate that a gender difference exists in the “faith factor” in health.

30. c. is the answer. (p. 527)
   a. Health psychology is a subfield of behavioral medicine.
   b. Holistic medicine is an older term that refers to medical practitioners who take more of an interdisciplinary approach to treating disorders.
   d. Osteopathy is a medical therapy that emphasizes manipulative techniques for correcting physical problems.

31. c. is the answer. (p. 528)
   a., b., & d. The pituitary does not produce stress hormones nor is the parasympathetic division involved in arousal.


Matching Items

1. a (p. 524)  
2. k (p. 520)  
3. c (p. 518)  
4. i (p. 524)  
5. b (p. 498)  
6. g (p. 498)  
7. h (p. 500)  
8. d (p. 500)  
9. f (p. 504)  
10. j (p. 520)  
11. e (p. 498)  

Progress Test 2

Multiple-Choice Questions

1. a. is the answer. Emotional arousal activates the sympathetic nervous system, causing the release of sugar into the blood for energy, pupil dilation, and the diverting of blood from the internal organs to the muscles, all of which help prepare the body to meet an emergency. (p. 500)  
   b. Being autonomic responses, most emotions are involuntary reactions.  
   c. All emotions do not have the same physiological basis.  
   d. Some emotions occur without cognitive awareness.

2. c. is the answer. According to Schachter and Singer, the two factors in emotion are (1) physical arousal and (2) conscious interpretation of the arousal. (p. 498)

3. a. is the answer. The principle of relative deprivation states that happiness is relative to others’ attainments. This helps explain why those who are relatively well off tend to be slightly more satisfied than the relatively poor, with whom the better-off can compare themselves. (p. 526)  
   b. Adaptation level is the tendency for our judgments to be relative to our prior experience.  
   c. This phenomenon has nothing to do with the interpretation of emotion.  
   d. Opponent processes are not discussed in the text in relation to emotion.

4. b. is the answer. (p. 498)  
   a. The James-Lange theory states that the experience of an emotion is an awareness of one’s physical response to an emotion-arousing stimulus.  
   c. The two-factor theory states that to experience emotion one must be physically aroused and attribute the arousal to an emotional cause.  
   d. There is no such theory; catharsis refers to the release of emotion.

5. d. is the answer. (p. 514)

6. d. is the answer. No device can literally measure lying. The polygraph measures breathing, pulse rate, blood pressure, and perspiration for changes indicative of physiological arousal. (p. 504)

7. b. is the answer. (p. 502)

8. b. is the answer. Whereas the meanings of gestures vary from culture to culture, facial expressions seem to have the same meanings around the world. (p. 511)

9. a. is the answer. If, as the theory claims, emotions are triggered by physiological reactions, then each emotion must be associated with a unique physiological reaction. (p. 498)  
   b. According to the Cannon-Bard theory, the same general body response accompanies many emotions.  
   c. The two-factor theory states that the cognitive interpretation of a general state of physical arousal determines different emotions.  
   d. There is no such theory; catharsis refers to the release of emotion.

10. a. is the answer. (pp. 529–530)

11. d. is the answer. As the Schachter-Singer study indicated, physical arousal is not always accompanied by an emotional reaction. Only when arousal was attributed to an emotion was it experienced as such. The results of this experiment, therefore, support the viewpoint that conscious interpretation of arousal must precede emotion. (p. 503)  
   a., b., & c. Each of these was presented as a supporting argument in the text.

12. a. is the answer. (p. 518)  
   b. The opposite is true. Any emotional arousal will simmer down if you wait long enough.  
   c. Catharsis often magnifies anger, escalates arguments, and leads to retaliation.  
   d. When counterattack is justified and can be directed at the offender, catharsis may be helpful.

13. d. is the answer. (p. 500)

14. c. is the answer. (p. 536)

15. a. is the answer. That physical arousal can be misattributed demonstrates that it is the cognitive interpretation of arousal, rather than the intensity or specific nature of the body’s arousal, that determines the conscious experience of emotions. (p. 503)  
   b. & c. The findings of these studies do not indicate that a minimum level of arousal is necessary for an emotional experience nor that applying a cognitive label must be simultaneous with the arousal.

16. c. is the answer. As heightened arousal may reflect feelings of anxiety or irritation rather than of guilt, the polygraph, which simply measures arousal, may easily err. (p. 504)
a. Misuse and invasion of privacy are valid issues, but Lykken primarily objects to the use of lie detectors because of their inaccuracy.

b. Although there are discrepancies among the various measures of arousal, this was not what Lykken objected to.

d. The lie detector errs about one-third of the time.

17. c. is the answer. (p. 529)

a. The final stage of the general adaptation syndrome is exhaustion.

b. & d. Although both of these are true, neither has anything to do with "tend and befriend."

18. c. is the answer. (p. 519)

19. d. is the answer. (p. 526)

20. c. is the answer. (p. 513)

a. & b. These are true of cultures that emphasize individuality rather than interdependence.

21. b. is the answer. The result is that their blood may contain excess cholesterol and fat. (p. 532)

a. Under relaxed situations, there is no difference in blood pressure.

c. Anger, both expressed and suppressed, is more characteristic of Type A people.

d. The text doesn't indicate that Type A persons are more outgoing than Type B persons.

22. d. is the answer. B lymphocytes fight bacterial infections; T lymphocytes attack cancer cells, viruses, and foreign substances; and macrophages ingest harmful invaders. (p. 534)

23. a. is the answer. A variety of studies have shown that stress depresses the immune system, increasing the risk and potential severity of many diseases. (pp. 534–535)

24. d. is the answer. (p. 534)

25. a. is the answer. (p. 534)

b. An underreactive immune system would make an individual more susceptible to infectious diseases or the proliferation of cancer cells.

c. & d. Lymphocytes are disease- and infection-fighting white blood cells in the immune system.

26. d. is the answer. (pp. 536–537)

27. d. is the answer. The crucial characteristic of Type A behavior seems to be a tendency to react with negative emotions, especially anger; other aspects of Type A behavior appear not to predict heart disease, and some appear to be helpful to the individual. (p. 532)

28. d. is the answer. In biofeedback training, people are given sensory feedback about autonomic responses. Although biofeedback may promote relaxation, its benefits may be no greater than those produced by simpler, and less expensive, methods. (pp. 544–545)

29. d. is the answer. As a group, religiously active people are no more affluent than other people. (pp. 548–549)

30. b. is the answer. (p. 546)

a. There is no such subfield of medicine.

c. Chi is an alleged form of energy, imbalances of which Chinese herbal therapies and acupuncture are intended to treat.

d. The term psychosomatic was once used to describe psychologically caused symptoms. Many forms of alternative medicine, including acupuncture, are intended to treat a full range of symptoms and diseases.

31. d. is the answer. This chapter deals with the topics of health psychology, namely, preventing illness, by developing better ways to cope with stress; treating illness, by improving the ways in which people notice and explain symptoms; and promoting health, for example, through nutrition and weight control. (p. 527)

True–False Items

1. F (p. 529) 5. T (pp. 513–514) 9. F (pp. 503–504)
2. F (p. 510) 6. T (pp. 539–540) 10. F (pp. 498–499)
3. T (p. 500) 7. F (pp. 522–523) 11. T (p. 532)
4. F (p. 538) 8. T (p. 503) 12. T (p. 541)

Psychology Applied

Multiple-Choice Questions

1. b. is the answer. The James-Lange theory proposes that the experienced emotion is an awareness of a prior body response: Your pulse races, and so you feel nervous. (p. 498)

a. According to the Cannon-Bard theory, your body's reaction would occur simultaneously with, rather than before, your experience of the emotion.

c. Relative deprivation refers to our sense that we are worse off than others with whom we compare ourselves.

d. The adaptation-level phenomenon concerns our tendency to judge stimuli on the basis of recent experience.

2. b. is the answer. Professor Simon's judgment of his office is affected by his recent experience: When that experience was of a smaller office, his new office seemed terrific; now, however, it is commonplace. (p. 524)
a. Relative deprivation is the sense that one is worse off than those with whom one compares oneself.

b. The two-factor theory has to do with the cognitive labeling of physical arousal.
c. This is the idea that there is an inverse relationship between the difficulty of a task and the optimum level of arousal. It is not discussed in this chapter.

3. b. is the answer. The parasympathetic division is involved in calming arousal. (p. 500)
   a. The sympathetic division is active during states of arousal and hence would not be active in the situation described.
   c. The somatic division is involved in transmitting sensory information and controlling skeletal muscles; it is not involved in arousing and calming the body.
   d. This answer is too general, since the peripheral nervous system includes not only the parasympathetic division but also the sympathetic division and the somatic division.

4. a. is the answer. According to the James-Lange theory, Maria’s emotions should be greatly diminished since her brain is unable to sense physical arousal. (p. 502)
   b. Cannon and Bard would have expected Maria to experience emotions normally because they believed that the experiencing of emotions occurs separately from the body’s responses.
   c. & d. These theories and principles make no particular prediction regarding the importance of physical arousal in the conscious experience of emotion.

5. b. is the answer. Expressions may amplify the associated emotions. (p. 513)
   a. Laboratory studies have shown that facial expressions intensify emotions.
   c. Arousal of the sympathetic nervous system, such as occurs when one is afraid, slows digestive function.
   d. Increased body temperature accompanies anger but not fear.

6. d. is the answer. In keeping with the catharsis hypothesis, Jane feels less angry after releasing her aggression. (p. 518)
   a. Adaptation level is our tendency to judge things relative to our experiences.
   b. This is not a specific theory.
   c. Relative deprivation is the sense that one is worse off relative to those with whom one compares oneself.

7. c. is the answer. According to the two-factor theory, it is cognitive interpretation of the same general physiological arousal that distinguishes the two emotions. (p. 498)
   a. According to the James-Lange theory, if the same physical arousal occurred in the two instances, the same emotions should result.
   b. The Cannon-Bard theory argues that conscious awareness of an emotion and body reaction occur at the same time.
   d. Adaptation level concerns our tendency to judge things relative to our experiences.

8. d. is the answer. (p. 504)

9. d. is the answer. (p. 501)

10. c. is the answer. Because physical arousal tends to intensify emotions, Dan (who is likely to be physically aroused after playing tennis) will probably be angrier than Bob or Veronica, who are in more relaxed states. (p. 503)

11. d. is the answer. (p. 512)
   a. & c. The Cannon-Bard and two-factor theories of emotion do not address the universality of emotional expressions.
   b. Even if it is true that emotional expressions are acquired at an early age, this would not necessarily account for the common facial expressions of children from around the world. If anything, the different cultural experiences of the children might lead them to express their feelings in very different ways.

12. d. is the answer. In Japan and China, cultures that emphasize human connections and interdependence, personal emotional displays are rare. (p. 513)
   a. b. & c. In cultures that encourage individuality, as in Western Europe, Australia, and North America, personal emotions are displayed openly.

13. c. is the answer. (p. 502)
   a. Individuals with more active right frontal lobes tend to be less cheerful and are more likely to be depressed.
   b. In fact, just the opposite is true: people with greater left frontal activity tend to be better able to turn off upsetting feelings.
   d. The text does not suggest that greater left or right frontal activity influences a person’s ability to express his or her feelings.

14. a. is the answer. As people experience negative emotions, such as anger, the right hemisphere becomes more electrically active. (p. 502)
   c. & d. The EEG measures electrical activity on the surface of the cortex, not at the level of struc-
tures deep within the brain, such as the amygdala.

15. d. is the answer. (pp. 548–549)
16. c. is the answer. People who are in a good mood are more likely to help others. Bonnie, who is probably pleased with herself for earning a Ph.D., is likely to be in a better mood than Drew, Leon, or Nancy. (p. 520)

17. d. is the answer. (p. 519)
a. Venting anger immediately may lead you to say things you later regret and/or may lead to retaliation by the other person.
b. Going over the reasons for your anger merely prolongs the emotion.
c. Counting to 10 may give you a chance to calm down, but “blowing off steam” may rekindle your anger.

18. d. is the answer. Cindy is unhappy with her promotion because she feels deprived relative to Janice. (p. 524)
a. The adaptation-level phenomenon would predict that Cindy’s raise would cause an increase in her happiness, since her most recent experience was to earn a lower salary.
b. The two-factor theory has to do with the cognitive labeling of physical arousal.
c. The catharsis hypothesis maintains that venting one’s anger may relieve aggressive urges.

19. c. is the answer. (p. 510)
20. b. is the answer. Ricardo is attempting to address his emotional needs, since he has been unable to alleviate stress directly. (p. 538)
21. c. is the answer. According to Selye’s general adaptation syndrome, diseases are most likely to occur in this final stage. (p. 530)
a. & b. Resistance to disease is greater during the alarm and resistance phases because the body’s mobilized resources are not yet depleted.
d. There is no such thing as the “depletion phase.” Moreover, the post-traumatic stress syndrome refers to the haunting nightmares and anxiety of those who have suffered extreme stress, such as that associated with combat.

22. b. is the answer. (p. 528)
a., c., & d. Each of these is a factor in coping with stress, but it is how an event is perceived that determines whether it is stressful or not.

23. c. is the answer. (p. 542)
24. b. is the answer. Living under crowded conditions contributes to feeling a lack of control, which is the situation in Kyumi’s case. (p. 539)

25. b. is the answer. (p. 532)

26. c. is the answer. (p. 532)
a. Macrophages are immune agents that search for and ingest harmful invaders.
b. B lymphocytes form in the bone marrow and release antibodies that fight bacterial infections.

27. b. is the answer. Stressful situations, such as exam weeks, decrease immune responses. (pp. 534–535)

28. c. is the answer. (pp. 538–540)
a. This is not realistic.
b. & d. These might actually increase the health consequences of potential stressors.

29. c. is the answer. (p. 534)
a. The text does not discuss any such thing as a “psychogenic” illness.
b. Biopsychosocial refers to the approach that incorporates biological, psychological, and social-cultural levels of analysis.
d. Biofeedback is a system for recording information regarding a subtle physiological state, such as blood pressure.

30. d. is the answer. (pp. 538–542)
31. a. is the answer. (p. 546)
b. In fact, botanical herbs have given us many widely used drugs, including morphine and penicillin, each of which was proven to be useful in controlled research studies.
c. Herbal remedies and acupuncture—to name two forms of complementary and alternative medicine—have a long tradition in other parts of the world and remain enormously popular today.

**Essay Questions**

1. All emotions involve some degree of physiological arousal of the sympathetic nervous system. Although the arousal that occurs with different emotions is in most ways undifferentiated, there may be subtle differences in the brain pathways and hormones associated with different emotions. Other examples of the influence of biological factors on emotion are the universality of facial expressions of emotion.

   Unlike facial expressions of emotion, the meaning of many gestures is culturally determined. Culture also influences how people express their feelings. In cultures that encourage individuality, for example, personal emotions are displayed openly. In cultures that emphasize human interdependence, the display of personal emotions is discouraged.
2. When potentially stressful events occur, a person’s appraisal is a major determinant of their impact. Catastrophes, significant life events, and daily hassles are especially stressful when appraised as negative and uncontrollable and when the person has a pessimistic outlook on life. Under these circumstances, stressful events may suppress immune responses and make the person more vulnerable to disease. If stressors cannot be eliminated, aerobic exercise, biofeedback, relaxation, and spirituality can help the person cope. Aerobic exercise can reduce stress, depression, and anxiety, perhaps by increasing production of mood-boosting neurotransmitters. During biofeedback training, people enjoy a calm, relaxing experience that can be helpful in reducing stress. Research demonstrates that people who regularly practice relaxation techniques enjoy a greater sense of tranquility and have lower blood pressure and stronger immune responses. People with strong social ties eat better, exercise more, and smoke and drink less. Social support may also help people evaluate and overcome stressful events. In addition, confusing painful feelings to others has been demonstrated to reduce the physiological responses linked to stress.

6. Catharsis is emotional release; according to the catharsis hypothesis, by expressing our anger, we can reduce it. (p. 518)

7. The feel-good, do-good phenomenon is the tendency of people to be helpful when they are in a good mood. (p. 520)

8. Subjective well-being refers to a person’s sense of satisfaction with his or her life. (p. 520)

9. The adaptation-level phenomenon refers to our tendency to judge things relative to a neutral level defined by our prior experience. (p. 524)

10. The principle of relative deprivation is the perception that we are worse off relative to those with whom we compare ourselves. (p. 524)

11. Behavioral medicine is the interdisciplinary field that applies behavioral and medical knowledge to the treatment of disease and the promotion of health. (p. 527)

12. Health psychology is a subfield of psychology that studies how health and illness are influenced by emotions, stress, personality, lifestyle, and other psychological factors. (p. 527)

13. Stress refers to the process by which we perceive and respond to events, called stressors, that we perceive as threatening or challenging. (p. 528)

14. The general adaptation syndrome (GAS) is the three-stage sequence of bodily reaction to stress outlined by Hans Selye. (p. 529)

15. The leading cause of death in North America today, coronary heart disease results from the clogging of the vessels that nourish the heart muscle. (p. 532)

16. Type A personality is Friedman and Rosenman’s term for the coronary-prone behavior pattern of competitive, hard-driving, impatient, verbally aggressive, and anger-prone people. (p. 532)

17. Type B personality is Friedman and Rosenman’s term for the coronary-resistant behavior pattern of easygoing, relaxed people. (p. 532)

18. A psychophysiological illness is any genuine illness such as hypertension and some headaches that is apparently linked to stress rather than caused by a physical disorder. (p. 534)

Memory aid: Psycho- refers to mind; physio- refers to body; a psychophysiological illness is a mind-body disorder.

Key Terms

Writing Definitions

1. Emotion is a response of the whole organism involving three components: (1) physiological arousal, (2) expressive behaviors, and (3) conscious experience. (p. 498)

2. The James-Lange theory states that emotional experiences are based on an awareness of the body’s responses to emotion-arousing stimuli: a stimulus triggers the body’s responses that in turn trigger the experienced emotion. (p. 498)

3. The Cannon-Bard theory states that the subjective experience of an emotion occurs at the same time as the body’s physical reaction. (p. 498)

4. The two-factor theory of emotion proposes that emotions have two ingredients: physical arousal and a cognitive label. Thus, physical arousal is a necessary, but not a sufficient, component of emotional change. For an emotion to be experienced, arousal must be attributed to an emotional cause. (p. 498)

5. The polygraph, or lie detector, is a device that measures several of the physiological responses accompanying emotion. (p. 504)
19. Psychoneuroimmunology (PNI) is the study of how psychological, neural, and endocrine processes affect the immune system and resulting health. (p. 532)

20. Lymphocytes are the two types of white blood cells of the immune system that fight bacterial infections (B lymphocytes) and viruses, cancer cells, and foreign substances in the body (T lymphocytes). (p. 534)

21. Coping refers to any effort to alleviate stress using emotional, cognitive, or behavioral methods. (p. 538)

22. Problem-focused coping involves reducing stress by directly changing a stressor or how we interact with it. (p. 538)

23. Emotion-focused coping involves reducing stress by avoiding or ignoring a stressor and attending to the emotional reactions it triggers. (p. 538)

24. Aerobic exercise is any sustained activity such as running, swimming, or cycling that promotes heart and lung fitness and may help alleviate depression and anxiety. (p. 543)

25. Biofeedback refers to a system for electronically recording, amplifying, and feeding back information regarding a subtle physiological state. (p. 544)

Memory aid: A biofeedback device, such as a brain-wave trainer, provides auditory or visual feedback about biological responses.

26. Complementary and alternative medicine (CAM) is a collection of health care remedies and treatments that have not been accepted by medical science or verified by controlled research trials. (p. 546)

Cross-Check

ACROSS
1. Type A
2. polygraph
7. feel-good, do-good
9. aerobic
10. stress
12. Cannon-Bard
13. alarm
14. lymphocyte
15. Selye

DOWN
1. Type B
3. relative deprivation
4. two-factor
5. emotion
6. adaptation level
8. macrophage
11. James-Lange
12. catharsis