MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) Which type of skin cancer appears as a scaly reddened papule and tends to grow rapidly and metastasize?
   A) Squamous cell carcinoma  
   B) Melanoma  
   C) Adenoma  
   D) Basal cell carcinoma

Answer: A
Explanation: A

2) Keratinocytes are an important epidermal cell because they ________.
   A) produce a fibrous protein that gives the skin much of its protective properties
   B) are able to reproduce sporadically as needed
   C) are able to transform from living cells to plasma membranes and still function
   D) are a powerful defense against damaging UV rays

Answer: A
Explanation: A

3) The dermis is a strong, flexible connective tissue layer. Which of the following cell types are likely to be found in the dermis?
   A) osteoblasts, osteoclasts, and epithelial cells
   B) fibroblasts, macrophages, and mast cells
   C) goblet cells, parietal cells, and Kupffer cells
   D) monocytes, reticulocytes, and osteocytes

Answer: B
Explanation: B

4) The dermis ________.
   A) lacks sensory corpuscles and glands
   B) is an avascular connective tissue layer
   C) is where melanocytes are found
   D) has two layers

Answer: D
Explanation: D
5) Which muscles attached to the hair follicles cause goose bumps?  
   A) arrector folliculi  
   B) levator folliculi  
   C) arrector integument  
   D) arrector pili  
Answer: D  
Explanation:  
   A)  
   B)  
   C)  
   D)  

6) Changes in the color of skin are often an indication of a homeostatic imbalance. Which of the following changes would suggest that a patient is suffering from Addison’s disease?  
   A) The skin takes on a bronze or metallic appearance.  
   B) It is impossible to suggest Addison’s disease from an inspection of a person’s skin.  
   C) The skin appears to have an abnormal, yellowish tint.  
   D) Black-and-blue marks become evident for no apparent cause.  
Answer: A  
Explanation:  
   A)  
   B)  
   C)  
   D)  

7) Which of the following statements indicates the way in which the body’s natural defenses protect the skin from the effects of UV damage?  
   A) The skin is protected by the synthesis of three pigments that contribute to the skin’s color.  
   B) The skin is protected by increasing the number of epidermal dendritic cells, which help to activate the immune system.  
   C) Prolonged exposure to the sun induces melanin dispersion, which in turn acts as a natural sunscreen.  
   D) Carotene, which accumulates in the stratum corneum and hypodermal adipose tissue, is synthesized in large amounts in the presence of sunlight.  
Answer: C  
Explanation:  
   A)  
   B)  
   C)  
   D)  

8) Acne is a disorder associated with  
   A) sebaceous glands  
   B) sweat glands  
   C) Meibomian glands  
   D) ceruminous glands  
Answer: A  
Explanation:  
   A)  
   B)  
   C)  
   D)
9) The dermis has two major layers; which of the following constitutes 80% of the dermis and is responsible for the tension lines in the skin?

   A) the subcutaneous layer       B) the hypodermal layer
   C) the papillary layer          D) the reticular layer

   Answer: D
   Explanation: A) B) C) D)

10) Sudoriferous (sweat) glands are categorized as two distinct types. Which of the following are the two types of sweat glands?

   A) mammary and ceruminous       B) holocrine and mammary
   C) eccrine and apocrine          D) sebaceous and merocrine

   Answer: C
   Explanation: A) B) C) D)

11) The sebaceous glands are simple alveolar glands that secrete a substance known as sebum. The secretion of sebum is stimulated ________.

   A) by high temperatures
   B) by hormones, especially androgens
   C) as a protective coating when one is swimming
   D) when the air temperature drops

   Answer: B
   Explanation: A) B) C) D)

12) In addition to protection (physical and chemical barrier), the skin serves other functions. Which of the following is another vital function of the skin?

   A) It absorbs vitamin C so that the skin will not be subject to diseases.
   B) It converts modified epidermal cholesterol to a vitamin D precursor important to calcium metabolism.
   C) The cells of the epidermis store glucose as glycogen for energy.
   D) It aids in the transport of materials throughout the body.

   Answer: B
   Explanation: A) B) C) D)
13) Melanocytes and keratinocytes work together in protecting the skin from UV damage when keratinocytes ________.
   A) maintain the appropriate pH in order for the melanocyte to synthesize melanin granules
   B) maintain the appropriate temperature so the product of the melanocyte will not denature
   C) accumulate the melanin granules on their superficial portion, forming a UV-blocking pigment layer
   D) provide the melanocyte with a protective shield against abrasion
   Answer: C
   Explanation: A, B, C

14) Which of the following cutaneous receptors is specialized for the reception of touch or light pressure?
   A) Pacinian corpuscles
   B) Meissner's corpuscles
   C) free nerve endings
   D) Krause's end bulbs
   Answer: B
   Explanation: A, B, C

15) Apocrine glands, which begin to function at puberty under hormonal influence, seem to play little role in thermoregulation. Where would we find these glands in the human body?
   A) beneath the flexure lines in the body
   B) in the axillary and anogenital area
   C) in the palms of the hands and soles of the feet
   D) in all body regions and buried deep in the dermis
   Answer: B
   Explanation: A, B, C

16) The major regions of a hair shaft include all of the following except ________.
   A) cuticle
   B) cortex
   C) external root sheath
   D) medulla
   Answer: C
   Explanation: A, B, D
17) Although the integument is a covering, it is by no means simple, and some of its functions include _______.
   A) epidermal blood vessels serving as a blood reservoir
   B) resident macrophage-like cells whose function is to ingest antigenic invaders and present them to the immune system
   C) cooling the body by increasing the action of sebaceous glands during high-temperature conditions
   D) the dermis providing the major mechanical barrier to chemicals, water, and other external substances

Answer: B
Explanation: A) B) C) D)

18) If a splinter penetrated the skin into the second epidermal layer of the sole of the foot, which cells would be damaged?
   A) lucidum  B) spinosum  C) granulosum  D) basale

Answer: A
Explanation: A) B) C) D)

19) Male pattern baldness has a genetic switch that turns on in response to _______.
   A) male hormones  B) size  C) weight  D) age

Answer: A
Explanation: A) B) C) D)

20) Which of the following is a skin sensory receptor for touch?
   A) free nerve ending  B) Ruffini body  C) Meissner’s corpuscle  D) Pacinian corpuscle

Answer: C
Explanation: A) B) C) D)

21) _______ is an inherited condition that affects the heme pathway; it leaves the skin scarred and gums degenerated, and may have led to the folklore about vampires.
   A) Decubitus ulcer  B) Impetigo  C) Porphyria  D) Rosacea

Answer: C
Explanation: A) B) C) D)
22) The composition of the secretions of the eccrine glands is ________.
   A) metabolic wastes
   B) fatty substances, proteins, antibodies, and trace amounts of minerals and vitamins
   C) 99% water, sodium chloride, trace amounts of wastes, and vitamin C
   D) primarily uric acid
Answer: C
Explanation: A) B) C) D)

23) Eyebrow hairs are always shorter than hairs on your head because ________.
   A) eyebrow follicles are only active for a few months
   B) the vascular supply of the eyebrow follicle is one-tenth that of the head hair follicle
   C) hormones in the eyebrow follicle switch the growth off after it has reached a predetermined length
   D) they grow much slower
Answer: A
Explanation: A) B) C) D)

24) A needle would pierce the epidermal layers of the forearm in which order?
   A) corneum, granulosum, spinosum, basale
   B) basale, spinosum, granulosum, lucidum, corneum
   C) basale, spinosum, granulosum, corneum
   D) granulosum, basale, spinosum, corneum
Answer: A
Explanation: A) B) C) D)

25) The ________ gland is a modified sudoriferous gland that secretes wax.
   A) eccrine       B) mammary       C) apocrine       D) ceruminous
Answer: D
Explanation: A) B) C) D)

26) What is the first threat to life from a massive third-degree burn?
   A) infection            B) catastrophic fluid loss
   C) loss of immune function                D) unbearable pain
Answer: B
Explanation: A) B) C) D)
27) Nutrients reach the surface of the skin (epidermis) through the process of ________.
   A) utilizing the products of merocrine glands to nourish the epidermis
   B) absorbing materials applied to the surface layer of the skin
   C) filtration
   D) diffusing through the tissue fluid from blood vessels in the dermis

   Answer: D
   Explanation: A) B) C) D)

28) The design of a person’s epidermal ridges is determined by the manner in which the papillae rest upon the dermal ridges to produce the specific pattern known as handprints, footprints, and fingerprints. Which of the following statements is true regarding these prints or ridges?
   A) Because we are constantly shedding epithelial cells, these ridges are changing daily.
   B) Identical twins do not have the same pattern of ridges.
   C) They are genetically determined, therefore unique to each person.
   D) Every human being has the same pattern of ridges.

   Answer: C
   Explanation: A) B) C) D)

29) The reason the hypodermis acts as a shock absorber is that ________.
   A) it has no delicate nerve endings and can therefore absorb more shock
   B) it is located just below the epidermis and protects the dermis from shock
   C) the major part of its makeup is adipose, which serves as an effective shock absorber
   D) the cells that make up the hypodermis secrete a protective mucus

   Answer: C
   Explanation: A) B) C) D)

30) The papillary layer of the dermis is connective tissue heavily invested with blood vessels. The superficial surface has structures called:
   A) ceruminous glands. B) dermal papillae.
   C) reticular papillae. D) hair follicles.

   Answer: B
   Explanation: A) B) C) D)
31) Burns are devastating and debilitating because of loss of fluids and electrolytes from the body. How do physicians estimate the extent of burn damage associated with such dangerous fluid loss?
   A) by using the "rule of nines"
   B) by measuring urinary output and fluid intake
   C) by observing the tissues that are usually moist
   D) through blood analysis

   Answer: A
   Explanation: A)
               B)
               C)
               D)

32) Which of the following statements best describes what fingernails actually are?
   A) Fingernails are a separate tissue from the skin, formed from a different embryonic layer.
   B) Fingernails are derived from osseous tissue.
   C) Fingernails are a modification of the epidermis.
   D) Fingernails are extensions of the carpal bones.

   Answer: C
   Explanation: A)
               B)
               C)
               D)

33) Water loss through the epidermis could cause a serious threat to health and well-being. Which of the following protects us against excessive water loss through the skin?
   A) Fat associated with skin prevents water loss.
   B) Lamellated granules of the cells of the stratum granulosum, a glycolipid that is secreted into extracellular spaces.
   C) The dermis is the thickest portion of the skin and water cannot pass through it.
   D) The size and shape of the cells that make up the stratum spinosum, as well as the thick bundles of intermediate filaments.

   Answer: B
   Explanation: A)
               B)
               C)
               D)

34) The integumentary system is protected by the action of cells that arise from bone marrow and migrate to the epidermis. Which of the following cells serve this function?
   A) tactile cells
   B) macrophages called epidermal dendritic cells
   C) cells found in the stratum spinosum
   D) keratinocytes, because they are so versatile

   Answer: B
   Explanation: A)
               B)
               C)
               D)
35) Select the most correct statement concerning skin cancer.
   A) Most tumors that arise on the skin are malignant.
   B) Basal cell carcinomas are the least common but most malignant.
   C) Squamous cell carcinomas arise from the stratum corneum.
   D) Melanomas are rare but must be removed quickly to prevent them from metastasizing.
   Answer: D
   Explanation: A) B) C) D)

36) The epidermis consists of five layers of cells, each layer with a distinct role to play in the health, well-being, and functioning of the skin. Which of the following layers is responsible for cell division and replacement?
   A) stratum lucidum
   B) stratum corneum
   C) stratum granulosum
   D) stratum basale
   Answer: D
   Explanation: A) B) C) D)

37) Sudoriferous glands vary in distribution over the surface of the body. Which of the following is correct?
   A) Ceruminous glands secrete cerumen, which is thought to deter insects.
   B) Eccrine are the most numerous, being found primarily in the axillary regions.
   C) Mammary glands are not considered a modified sweat gland.
   D) Apocrine glands are larger than eccrine, and empty secretions directly to the surface of the skin.
   Answer: A
   Explanation: A) B) C) D)

38) Vernix caseosa is a ________.
   A) cheesy- looking sudoriferous secretion on the skin of newborns
   B) substance contributing to acne during adolescence
   C) whitish material produced by fetal sebaceous glands
   D) coat of fine, downy hair on the heads of balding men
   Answer: C
   Explanation: A) B) C) D)
39) Despite its apparent durability, the dermis is subject to tearing. How might a person know that the dermis has been stretched and/or torn?
   A) The stretching causes the tension lines to disappear.
   B) The appearance of visible, silvery-white scars is an indication of stretching of the dermis.
   C) The blood vessels in the dermis rupture and the blood passes through the tissue, causing "black-and-blue marks."
   D) The pain is acute due to the large number of Meissner’s corpuscles.
Answer: B
Explanation: A) B) C) D)

40) An epidermal dendritic cell is a specialized ________.
   A) melanocyte   B) nerve cell
   C) squamous epithelial cell   D) phagocytic cell
Answer: D
Explanation: A) B) C) D)

41) The function of the root hair plexus is to ________.
   A) bind the hair root to the dermis
   B) allow the hair to assist in touch sensation
   C) serve as a source for new epidermal cells for hair growth after the resting stage has passed
   D) cause apocrine gland secretion into the hair follicle
Answer: B
Explanation: A) B) C) D)

42) Which statement correctly explains why hair appears the way it does?
   A) Air bubbles in the hair shaft cause straight hair.
   B) Gray hair is the result of hormonal action altering the chemical composition of melanin.
   C) Perfectly round hair shafts result in wavy hair.
   D) Kinky hair has flat, ribbonlike hair shafts.
Answer: D
Explanation: A) B) C) D)
43) What are the most important factors influencing hair growth?

A) the size and number of hair follicles  
B) sex and hormones  
C) nutrition and hormones  
D) age and glandular products

Answer: C

Explanation:
A)  
B)  
C)  
D)  

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Using Figure 5.1, match the following:

44) Responsible for shock absorption and located in the hypodermis.
   Answer: B
   Explanation:

45) The ________ are the small muscles located in the dermis that cause goose bumps.
   Answer: arrector pili
   Explanation:
46) Name the four kinds of sudoriferous glands.
Answer: 1. eccrine
2. apocrine
3. ceruminous
4. mammary
Explanation:

Using Figure 5.1, match the following:
47) Pulls the hair follicle into an upright position.
Answer: A
Explanation:

48) Robert, a surfer, has a mole that has changed its shape and size. His doctor, applying the ABCD(E) rule, diagnosed a melanoma. What do the letters ABCD(E) represent?
Answer: A = asymmetry
B = border irregularity
C = color
D = diameter
E = elevation
Explanation:
Using Figure 5.1, match the following:

49) Region that thickens markedly when one gains weight.
   Answer: B
   Explanation:

50) The layer of the epidermis immediately under the stratum lucidum in thick skin is the stratum ________.
   Answer: granulosum
   Explanation:
Using Figure 5.1, match the following:

51) Dense irregular connective tissue.
   Answer: D
   Explanation:

52) Why should incisions be made parallel to cleavage lines produced by collagen fiber bundles rather than perpendicular to the lines?
   Answer: The skin will gape less and heal more readily when the incision is made parallel to the cleavage lines.
   Explanation:

53) Why are the apocrine sweat glands fairly unimportant in thermal regulation?
   Answer: They are largely confined to the axillary and anogenital regions rather than distributed on the body where heat can be more readily dissipated.
   Explanation:

54) Balding men have tried all kinds of remedies, including hair transplants, to restore their lost locks. Explain the cause of male pattern baldness.
   Answer: It appears to be genetically determined and sex-linked, and is possibly caused by a delayed-action gene that responds to DHT and alters normal metabolism.
   Explanation:
55) The dermis is composed of the reticular and ________ layers.

   Answer: papillary
   Explanation:

56) ________ burns injure the epidermis and the upper regions of the dermis.

   Answer: Second-degree
   Explanation:

57) Cradle cap in infants is called ________.

   Answer: seborrhea
   Explanation:

58) In addition to the synthesis of vitamin D, keratinocytes are able to carry out some other biologically important functions. Name at least two of these other functions.

   Answer: Keratinocyte enzymes can neutralize carcinogens that penetrate the epidermis. Keratinocytes are also able to convert topical steroid hormones to a powerful anti-inflammatory drug.
   Explanation:
Using Figure 5.1, match the following:

59) Pain receptors are found here.
   Answer: E
   Explanation:

60) What are six of the functions of the epidermis?
   Answer: 1. Protection against abrasion.
            2. Protection from the sun's radiation.
            3. First line of immune system defense.
            4. Protection from water loss.
            5. Protection from heat loss.
            6. Covers the body; interfaces with the outside.
            7. Sensory perception.
   Explanation:

61) The white crescent portion of the nail is called the ________.
   Answer: lunula
   Explanation:
Using Figure 5.1, match the following:

62) Sudoriferous gland.
   Answer: C
   Explanation:

63) What is the function of skin dermal folds and deep skin creases?
   Answer: to accommodate for joint movement
   Explanation:

64) Why is skin not considered a heat barrier for the body?
   Answer: The skin proper must retain flexibility to give up excess body heat, so it must not function as a heat barrier. The hypodermis contains adipose tissue that acts as an insulator. With this setup, extra blood (and heat) can be shunted above the hypodermis when heat loss is desirable.
   Explanation:

65) A summertime golden bronze tan may not be a tan at all; especially if the skin appears almost metallic bronze, it may be the result of ________ disease.
   Answer: Addison's
   Explanation:
66) There are several reasons other than genetics for hair loss. Identify some of these other factors.

Answer: Stressors such as acutely high fever, surgery, severe emotional trauma; drugs such as antidepressants and chemotherapy drugs; burns and radiation; and a protein-deficient diet can cause hair loss or thinning.

Explanation:

67) The only place you will find stratum ________ is in the skin that covers the palms, fingertips, and soles of the feet.

Answer: lucidum

Explanation:

68) What are vellus hairs?

Answer: pale, fine body hair associated with newborn children, women, and bald men

Explanation:

69) Billions of consumer dollars are spent for deodorants and antiperspirants each year. Explain the production of body odors frequently associated with axillary skin.

Answer: Sweat is mostly an odorless watery secretion produced by eccrine and apocrine glands. The odor usually arises due to the metabolic activities of bacteria on the surface of the skin.

Explanation:

70) Why is profuse sweating on a hot day good, and yet a potential problem?

Answer: Good because the sweat and evaporating of the sweat causes cooling of the body. Bad because excessive water and salt loss may occur. Fluid and electrolyte imbalances may follow.

Explanation:

71) How are burns classified? Give an example.

Answer: Burns are classified according to their severity or depth. For example, in first-degree burns, only the epidermis is damaged; in second degree burns, the epidermis and upper dermis are damaged; in third degree burns, there is widespread damage of epidermis and dermis.

Explanation:
Using Figure 5.1, match the following:

72) Site of the dermal ridges that produce epidermal ridges on the epidermal surfaces of the fingers.
   Answer: E
   Explanation:

73) What are the functions of the papillary layer of the skin?
   Answer: 1. Feed and oxygenate the epidermis.
          2. Provide touch and pain receptors.
          3. Form the underlying foundation for ridges of the hands and toes.
   Explanation:

74) Name the layers of the epidermis in order from the surface down.
   Answer: Stratum corneum, lucidum, granulosum, spinosum, and basale.
   Explanation:

75) What complications might be anticipated from the loss of large areas of skin surfaces?
   Answer: Large losses of skin, as with severe burn injuries, allow excessive fluid loss and infection. Skin grafting or "synthetic skin" applications are usually necessary.
   Explanation:
76) The coarse hair of the eyebrows and scalp is called ________ hair.
   Answer: terminal
   Explanation:

77) ________ are pigment-producing cells in the epidermis.
   Answer: Melanocytes
   Explanation:

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

78) The outermost sheath of a hair follicle is the connective tissue root sheath.
   Answer: True False
   Explanation:

79) The dense fibrous connective tissue portion of the skin is located in the reticular region of the dermis.
   Answer: True False
   Explanation:

80) Regardless of race, all human beings have about the same number of melanocytes.
   Answer: True False
   Explanation:

81) The most dangerous skin cancer is cancer of the melanocytes.
   Answer: True False
   Explanation:

82) The hypodermis is composed of adipose and dense connective tissue.
   Answer: True False
   Explanation:

83) When a patient is said to have "third-degree burns," this indicates that the patient has burns that cover approximately one-third of the body.
   Answer: True False
   Explanation:

84) Joe just burned himself on a hot pot. A blister forms and the burn is painful. Joe's burn would best be described as a third-degree burn.
   Answer: True False
   Explanation:

85) A physician is often able to detect homeostatic imbalances in the body by observing changes in the skin color.
   Answer: True False
   Explanation:

86) The dermis is rich in blood vessels and nerve fibers.
   Answer: True False
   Explanation:
87) The hyponychium is commonly called the cuticle.
   Answer: True ○ False
   Explanation:

88) During the resting phase of hair growth, the matrix is inactive and the follicle atrophies.
   Answer: ○ True False
   Explanation:

89) The stratum corneum (outermost layer of skin) is a zone of approximately four layers of viable cells that are able to synthesize proteins that keep the outer layer of skin smooth and soft.
   Answer: True ○ False
   Explanation:

90) Ceruminous glands are modified merocrine glands.
   Answer: True ○ False
   Explanation:

91) Skin surface markings that reflect points of tight dermal attachment to underlying tissues are called epidermal ridges.
   Answer: True ○ False
   Explanation:

92) The skin is not able to receive stimuli because the cells of the epidermis are not living and therefore there are no sensory receptors in the skin.
   Answer: True ○ False
   Explanation:

93) Destruction of the matrix of the hair bulb would result in its inability to produce oil.
   Answer: True ○ False
   Explanation:

94) Sweat glands continuously produce small amounts of sweat, even in cooler temperatures.
   Answer: ○ True False
   Explanation:

95) The pinkish hue of individuals with fair skin is the result of the crimson color of oxygenated hemoglobin (contained in red blood cells) circulating in the dermal capillaries and reflecting through the epidermis.
   Answer: ○ True False
   Explanation:

96) When an individual is exposed to extremely low air temperatures, the dermal blood vessels will dilate so that blood and heat will be dissipated.
   Answer: True ○ False
   Explanation:

97) The protein found in large amounts in the outermost layer of epidermal cells is collagen.
   Answer: True ○ False
   Explanation:
98) The reason that the nail bed appears pink is the presence of a large number of melanocytes in the underlying dermis.

Answer: True

Explanation:

99) The apocrine sweat glands are fairly unimportant in thermoregulation.

Answer: False

Explanation:

100) Hair growth and density are influenced by hormones, nutrition, and, in some cases, lifestyle.

Answer: True

Explanation:

MATCHING. Choose the item in column 2 that best matches each item in column 1.

Match the following:

101) Usually indicates a liver disorder.

Answer: A) Jaundice

Match the following:

102) Skin macrophages that help activate the immune system.

Answer: A) Epidermal dendritic cells

Match the following:

103) May indicate embarrassment, fever, hypertension, inflammation, or allergy.

Answer: A) Erythema

Match the following:

104) The layer that contains the mitotic viable cells of the epidermis.

Answer: A) Stratum basale

Match the following:

105) Cell remnants of the stratum corneum.

Answer: A) Cornified keratinocytes

Match the following:

106) The glands that serve an important function in thermoregulation.

Answer: A) Sudoriferous glands

Match the following:

107) May indicate fear, anger, anemia, or low blood pressure.

Answer: A) Pallor
108) Appearance of a permanent tan; bronzing. Answer: A

Match the following:
109) The protein found in the epidermis that is responsible for toughening the skin. Answer: A)

Match the following:
109) The protein found in the epidermis that is responsible for toughening the skin. Answer: A)

Match the following:
110) Hair that lacks pigment and is often called "immature hair." Answer: A)

Match the following:
111) Cells plus a disc-like sensory nerve ending that functions as a sensory receptor for touch. Answer: A)

Match the following:
112) A bluish color in light-skinned individuals. Answer: A)

Match the following:
113) The most abundant cells of the epidermis. Answer: A)

Match the following:
114) The layer of the epidermis where the cells are considered protective but nonviable. Answer: A)
ESSAY. Write your answer in the space provided or on a separate sheet of paper.

115) The Waldorf family was caught in a fire but escaped. Unfortunately, the father and daughter suffered burns. The father had second-degree burns on his chest, abdomen, and both arms, and third-degree burns on his entire left lower extremity. The daughter suffered first-degree burns on her head and neck and second-degree burns on both lower extremities.

a. What percentage of the father’s body was covered by burns?
b. What percentage of the daughter’s body received first-degree burns?
c. What part of the daughter’s body has both the dermis and epidermis involved?
d. The father experiences a good deal of pain in the area of the chest and abdomen, but little pain in the leg. Why?
Answer: a. 48%  
b. 9%  
c. 36%  
d. Normally, third-degree burns sear nerve endings off. When the tissue regenerates, pain will return. Second-degree burns are usually very painful because of the irritation to the nerve endings.

116) Albinos commonly contract skin cancer. What seems to be their problem and what is a solution?
Answer: Albinos lack melanin and consequently do not have the normal defense against UV light. As a result, skin cells can be affected by UV and skin cancer can occur. Covering all body areas and avoiding bright sunlight can prevent the situation.

117) The 68-year-old patient was admitted to the hospital medical floor with a diagnosis of chronic bronchitis. His wife asks the nurse why his skin looks blue. How would you explain cyanosis to the patient and his wife?
Answer: Cyanosis is a dusky bluish or grayish discoloration of the skin and mucous membranes that occurs with reduced oxygen levels of hemoglobin. Hemoglobin carries oxygen to the tissues. Without enough oxygen getting to the tissues the skin in Caucasians appears blue. In dark-skinned patients, close inspection of the conjunctiva and palms and soles may also show evidence of cyanosis.

118) Melanoma is a form of skin cancer that arises from melanocytes. Melanoma is most common in Caucasians between 40 and 70 years of age. Explain why Caucasians would have a greater incidence of melanoma.
Answer: Melanoma has its beginnings in melanocytes, the skin pigment cells. These cells produce the dark protective pigment called melanin. It is the melanin that is responsible for suntanned skin acting as a partial protection against the sun. Melanocytes of black- and brown-skinned people produce many more darker melanocytes than those of fair-skinned individuals. Dark brown or black skin is not a guarantee against melanoma, but the incidence is higher in Caucasians.

119) John, a younger teenager, notices that he is experiencing a lot of pimples and blackheads, which frequently become infected. What is causing this problem?
Answer: Because of hormonal changes, teenagers frequently have overactive sebaceous (oil) glands, which can clog and become infected or inflamed. Scratching, squeezing, or irritating the tissue can lead to infection.

120) Explain why soap that has an alkaline base may not be healthy for some patients to use daily.
Answer: The skin’s acid mantle retards growth of bacteria. Soap may destroy the acid mantle of the skin, causing it to lose its protective mechanism. Some soaps contain antibacterial agents, which can change the natural flora of the skin.
121) The temperature yesterday was an uncomfortable 98° F. You unwisely chose to play tennis at noon, counting on your body’s internal defenses to protect you against heat exhaustion. How did your body respond to this distress?

Answer: The thermoreceptors in the skin sense the temperature change, and the body responded by stimulating sweat glands. Their watery products evaporated at the skin surface and cooled the body. Blood vessels in the dermis also responded to neural stimulation by dilating and releasing heat to the exterior.

122) We are told that every surface we touch is teeming with bacterial cells, and bacteria are found in the pools we swim in, the water we wash with, and on the hands of friends. Why are we not inundated with bacterial infections on our skin?

Answer: The low pH of the skin secretions, otherwise known as the acid mantle, retards the multiplication of bacteria on the skin. Also, in areas where sufficient sebum is produced regularly, many species of bacteria cannot exist. Beside the barrier qualities of the skin, it is also true that not all bacteria are harmful or thrive on skin.

123) Mary noticed a large, brown spot on her skin. She has been playing tennis in the sun for several years without sun protection. She reported the discovery to a friend, who told her to apply the ABCD rule to determine whether or not she had malignant melanoma. Her friend told her that if her answer was "no" to the questions that were asked by the ABCD rule, she had nothing to worry about. What is the ABCD rule and should she ignore the spot if her answers are negative?

Answer: The ABCD rule refers to the following: asymmetry—where the two sides of the spot do not match; border irregularity—the borders are not round and smooth; color—the pigmented spot contains shades of black, brown, tan, and sometimes blues and reds; and diameter—the spot is larger than 6 mm in diameter. It is imperative that Mary have a physician examine the spot immediately. Any unusual lesion on the skin of a sun worshipper should be examined.
1) A
2) A
3) B
4) D
5) D
6) A
7) C
8) A
9) D
10) C
11) B
12) B
13) C
14) B
15) B
16) C
17) B
18) A
19) A
20) C
21) C
22) C
23) A
24) A
25) D
26) B
27) D
28) C
29) C
30) B
31) A
32) C
33) B
34) B
35) D
36) D
37) A
38) C
39) B
40) D
41) B
42) D
43) C
44) B
45) arrector pili
46) 1. eccrine
    2. apocrine
    3. ceruminous
    4. mammary
47) A
The skin will gape less and heal more readily when the incision is made parallel to the cleavage lines.

They are largely confined to the axillary and anogenital regions rather than distributed on the body where heat can be more readily dissipated.

It appears to be genetically determined and sex-linked, and is possibly caused by a delayed-action gene that responds to DHT and alters normal metabolism.

Keratinocyte enzymes can neutralize carcinogens that penetrate the epidermis. Keratinocytes are also able to convert topical steroid hormones to a powerful anti-inflammatory drug.

1. Protection against abrasion.
2. Protection from the sun's radiation.
3. First line of immune system defense.
4. Protection from water loss.
5. Protection from heat loss.
6. Covers the body; interfaces with the outside.
7. Sensory perception.

To accommodate for joint movement

The skin proper must retain flexibility to give up excess body heat, so it must not function as a heat barrier. The hypodermis contains adipose tissue that acts as an insulator. With this setup, extra blood (and heat) can be shunted above the hypodermis when heat loss is desirable.

Addison's

Stressors such as acutely high fever, surgery, severe emotional trauma; drugs such as antidepressants and chemotherapy drugs; burns and radiation; and a protein-deficient diet can cause hair loss or thinning.

Lucidum

Pale, fine body hair associated with newborn children, women, and bald men

Sweat is mostly an odorless watery secretion produced by eccrine and apocrine glands. The odor usually arises due to the metabolic activities of bacteria on the surface of the skin.

Good because the sweat and evaporating of the sweat causes cooling of the body. Bad because excessive water and salt loss may occur. Fluid and electrolyte imbalances may follow.

Burns are classified according to their severity or depth. For example, in first-degree burns, only the epidermis is damaged; in second degree burns, the epidermis and upper dermis are damaged; in third degree burns, there is widespread damage of epidermis and dermis.

Feed and oxygenate the epidermis.

Provide touch and pain receptors.

Form the underlying foundation for ridges of the hands and toes.

Stratum corneum, lucidum, granulosum, spinosum, and basale.
75) Large losses of skin, as with severe burn injuries, allow excessive fluid loss and infection. Skin grafting or "synthetic skin" applications are usually necessary.

76) terminal
77) Melanocytes
78) TRUE
79) TRUE
80) TRUE
81) TRUE
82) FALSE
83) FALSE
84) FALSE
85) TRUE
86) TRUE
87) FALSE
88) TRUE
89) FALSE
90) FALSE
91) FALSE
92) FALSE
93) FALSE
94) TRUE
95) TRUE
96) FALSE
97) FALSE
98) FALSE
99) TRUE
100) TRUE
101) A
102) A
103) A
104) A
105) A
106) A
107) A
108) A
109) A
110) A
111) A
112) A
113) A
114) A
115) a. 48%
b. 9%
c. 36%
d. Normally, third-degree burns sear nerve endings off. When the tissue regenerates, pain will return. Second-degree burns are usually very painful because of the irritation to the nerve endings.

116) Albinos lack melanin and consequently do not have the normal defense against UV light. As a result, skin cells can be affected by UV and skin cancer can occur. Covering all body areas and avoiding bright sunlight can prevent the situation.
117) Cyanosis is a dusky bluish or grayish discoloration of the skin and mucous membranes that occurs with reduced oxygen levels of hemoglobin. Hemoglobin carries oxygen to the tissues. Without enough oxygen getting to the tissues the skin in Caucasians appears blue. In dark-skinned patients, close inspection of the conjunctiva and palms and soles may also show evidence of cyanosis.

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