Electrocardiography for Healthcare Professionals, 5e **(Booth)**
Chapter 1 Electrocardiography

1) What is the number one cause of death in the United States?
A) Cancer
B) Diabetes
C) Cardiovascular disease
D) Accidents

Answer: C
Explanation: Cardiovascular disease has been the number one cause of death in the United States since 1918.
Difficulty: 1 Easy
Topic: The ECG and Its History
Learning Objective: 01.01 Describe the history and the importance of the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation

2) The abbreviation CAD stands for:
A) cold appendage disorder.
B) coronary application disease.
C) cerebral artery disease.
D) coronary artery disease.

Answer: D
Explanation: CAD stands for "coronary artery disease," which is narrowing of the arteries surrounding the heart. It causes a reduction of blood flow to the heart.
Difficulty: 1 Easy
Topic: The ECG and Its History
Learning Objective: 01.01 Describe the history and the importance of the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.d Define and use medical abbreviations when appropriate and acceptable

3) What does the electrocardiogram or ECG detect?
A) The electrical activity of the heart
B) The muscle contractions of the heart
C) High blood pressure readings
D) The volume of blood pumped per minute

Answer: A
Explanation: The electrocardiograph produces a tracing of the electrical activity of the heart. This tracing is known as the ECG.
Difficulty: 1 Easy
Topic: The ECG and Its History
Learning Objective: 01.01 Describe the history and the importance of the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation

4) The first electrocardiograph was invented by:
A) Sir Thomas Lewis.
B) Willem Einthoven.
C) Thomas Edison.
D) Dr. James Herrick.

Answer: B
Explanation: In 1903, Willem Einthoven invented the first electrocardiograph.
Difficulty: 1 Easy
Topic: The ECG and Its History
Learning Objective: 01.01 Describe the history and the importance of the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation

5) The abbreviation for myocardial infarction, also known as a heart attack, is:
A) IM.
B) HA.
C) MI.
D) MCI.

Answer: C
Explanation: MI is the abbreviation for myocardial infarction.
Difficulty: 1 Easy
Topic: The ECG and Its History
Learning Objective: 01.01 Describe the history and the importance of the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.d Define and use medical abbreviations when appropriate and acceptable

6) An electrocardiograph (ECG) technician should be able to:
A) determine if an ECG tracing is accurate.
B) interpret the findings of an ECG tracing.
C) discuss the results of an ECG with the patient.
D) recommend patient care based on ECG findings.

Answer: A
Explanation: ECG technicians should be able to determine that the tracing is accurate and recognize abnormalities. Only a physician can interpret the ECG, discuss the findings with the patient, or recommend patient care.
Difficulty: 2 Medium
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Understand
Accessibility: Keyboard Navigation

7) An ECG monitor technician's main responsibility is to:
A) view the ECG tracings and alert the health care professional of an abnormal heart rhythm.
B) assist the physicians with invasive cardiovascular diagnostic tests.
C) perform ultrasounds of the heart and blood vessels.
D) repair hospital telemetry monitors.

Answer: A
Explanation: The responsibility of the ECG monitor technician is to view the ECG tracings and, if an abnormal heart rhythm occurs, alert the health care professional who can treat the abnormality.
Difficulty: 2 Medium
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Understand
Accessibility: Keyboard Navigation

8) A "stat" ECG is done:
A) yearly, as part of a routine physical.
B) immediately.
C) in the early morning.
D) before surgery.

Answer: B
Explanation: An emergency ECG may be referred to as "stat," meaning immediately.
Difficulty: 1 Easy
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 3.d Define and use medical abbreviations when appropriate and acceptable

9) Continuous ECG monitoring done in a hospital setting with a small transmitter box is known as:
A) Holter monitoring.
B) telemetry monitoring.
C) exercise electrocardiography.
D) echocardiography.

Answer: B
Explanation: Continuous monitoring done in the hospital with a small transmitter box is known as telemetry monitoring.
Difficulty: 1 Easy
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

10) Which of these tests is *least likely* done in a doctor's office?
A) Treadmill stress testing
B) Holter monitor
C) 12-lead ECG
D) Cardiac catheterization

Answer: D
Explanation: The 12-lead ECG is a routine diagnostic test performed in any doctor's office. Two other tests that may be performed in an office include treadmill stress testing and the Holter monitor. Cardiac catheterization is an invasive procedure that is done in a surgical setting, usually in a dedicated catheterization lab.
Difficulty: 2 Medium
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 2.c Identify diagnostic and treatment modalities as they relate to each body system

11) What device enables lay rescuers to help a patient with sudden cardiac arrest?
A) Automatic external defibrillator (AED)
B) Telemedicine monitor
C) Pacemaker
D) 12-lead ECG

Answer: A
Explanation: AEDs are available in public and some private places where large numbers of people gather. The AED has enabled lay rescuers to help a patient with a sudden cardiac arrest.
Difficulty: 2 Medium
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

12) Which of the following topics is the *least* important for an ECG technician to understand?
A) Medical law and ethics
B) Infection control
C) The procedure and the ECG machine
D) Detailed evaluation of ECG results

Answer: D
Explanation: In order to perform an ECG, you should become familiar with the procedure and the ECG machine, be able to lift and move the patient, and transport and operate the ECG machine. You must understand basic principles of infection control, patient education and communication, and law and ethics. Only the physician can evaluate ECG results.
Difficulty: 2 Medium
Topic: Uses of an ECG; Preparing for an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.; 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation

13) Which of the following is not included in standard precautions?
A) Proper hand hygiene
B) Sterilizing the ECG machine
C) Wearing gown, mask, and eye protection
D) Use of gloves

Answer: B
Explanation: Standard precautions include hand hygiene and wearing gloves. It may also include the use of a gown, mask, and eye protection, depending on the patient and situation.
Difficulty: 2 Medium
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

14) If the patient asks questions after you have explained the ECG procedure, you should:
A) repeat the instructions and clarify any questions the patient has.
B) ask the physician to answer the patient's questions.
C) perform the ECG as ordered.
D) have a co-worker explain the procedure to the patient.

Answer: A
Explanation: Helping the patient understand the procedure and follow instructions is essential to performing the ECG procedure. Use simple terms and speak slowly and distinctly. Encourage the patient to ask questions and repeat the instructions back to you.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation

15) Ethics are:
A) rules of conduct that are enforced by an authority.
B) statements of cultural values
C) standards of behavior and concepts of right and wrong.
D) determined by government regulations.

Answer: C
Explanation: Ethics are concerned with standards of behavior and concepts of right and wrong. They are based on moral values that are formed through the influence of the family, culture, and society.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation

16) HIPAA stands for:
A) Health Information Privacy and Availability Act.
B) Health Insurance Professionals Accounting Act.
C) Health Insurance Portability and Accountability Act.
D) Health Information Portability and Alternative Act.

Answer: C
Explanation: In 1996, the Health Insurance Portability and Accountability Act (HIPAA) was established in response to information being transferred electronically for medical transactions. This act ensures that electronic medical data are limited and secured.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.d Define and use medical abbreviations when appropriate and acceptable; 4.h Demonstrate compliance with HIPAA guidelines, the ADA Amendments Act, and the Health Information Technology for Economic and Clinical Health (HITECH) Act

17) Which of the following is an example of practicing ethics as a healthcare professional?
A) Maintaining professional liability insurance
B) Educating patients about the ECG procedure
C) Maintaining patient confidentiality
D) Troubleshooting the ECG machine

Answer: C
Explanation: Confidentiality is a basic right of every patient. A breach in confidentiality is both unethical and illegal.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 4.h Demonstrate compliance with HIPAA guidelines, the ADA Amendments Act, and the Health Information Technology for Economic and Clinical Health (HITECH) Act; 10.b Demonstrate professional behavior

18) Which of the following is not implied consent?
A) Patient agreeing to be treated by the physician
B) Patient signing a consent form for a treadmill stress test
C) Patient agreeing to have an ECG
D) Patient coming to the doctor's office for care

Answer: B
Explanation: Informed consent requires the patient to sign a consent form that he or she understands the risks involved with certain diagnostic procedures.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation

19) Your patient states, "I do not want that electricity going through me!" as you are getting ready to perform an ECG on him. The best response is to:
A) explain that the ECG machine is not harmful and does not produce electricity.
B) ask the patient to please lie down and be still.
C) show the patient that you will not plug the ECG machine into the wall outlet.
D) go get the physician and have him explain the procedure to the patient.

Answer: A
Explanation: Explain the procedure to the patient in a calm manner. Explain that the machine does not generate electricity and the procedure is quick and painless.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 10.b Demonstrate professional behavior

20) Who should sign the consent form if a patient cannot read or write?
A) The patient's physician
B) A co-worker
C) A family member of the patient
D) Your supervisor

Answer: C
Explanation: If a patient cannot read or write, you will need to explain the procedure to a family member and have that person sign the consent form along with the patient.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation

21) You have a patient that can only sign an "X" on the consent form. You need to:
A) leave the consent form blank.
B) explain the procedure to the patient with a witness present, have the patient place an X on the form, and have the witness sign the form also.
C) explain the reason the patient only signed an "X" on the consent form.
D) have the physician sign the consent form.

Answer: B
Explanation: Explain the procedure to the patient with a witness present, have the patient place an X on the form, and have the witness sign the form also.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation

22) The term for an abnormal heartbeat is:
A) angioplasty.
B) dysrhythmia.
C) myocardial infarction.
D) coronary artery disease.

Answer: B
Explanation: A dysrhythmia is an abnormal heartbeat.
Difficulty: 1 Easy
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

23) What does the term "Code Blue" mean when used in a hospital setting?
A) A biohazard spill has occurred in the hospital.
B) Severe weather is imminent.
C) A patient is experiencing pain around the heart.
D) A patient is unresponsive and needs immediate assistance.

Answer: D
Explanation: The term "Code Blue" is used by many institutions to indicate that a patient is unresponsive and needs immediate help.
Difficulty: 2 Medium
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

24) The _____ monitor allows the patient to participate in normal daily activities while the electrical activity of the heart is being recorded.
A) Holter
B) biphasic
C) multichannel
D) telemetry

Answer: A
Explanation: A Holter monitor is an instrument that records the electrical activity of the heart during a patient's routine daily activities.
Difficulty: 2 Medium
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

25) Which of the following is *not* a reason for performing an ECG?
A) To determine if there is a blockage in a coronary artery
B) To check for heart rhythm abnormalities
C) To document irregular heartbeats
D) As part of a yearly, routine physical exam

Answer: A
Explanation: An ECG may be performed as a part of a yearly physical examination or to detect heart rhythm abnormalities or an irregular heartbeat. An ECG alone cannot determine the presence of a blockage in a coronary artery.
Difficulty: 2 Medium
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 2.c Identify diagnostic and treatment modalities as they relate to each body system

26) Slander is an illegal and unethical act and is defined as:
A) writing defamatory words.
B) violating patient confidentiality.
C) making derogatory remarks about someone.
D) failing to obtain informed consent.

Answer: C
Explanation: Making derogatory remarks about someone that jeopardizes his or her reputation or means of livelihood is called *slander*.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty; 10.b Demonstrate professional behavior

27) _____ means writing defamatory words. It is illegal and unethical and could result in the loss of your job.
A) HIPAA
B) Libel
C) Consent
D) Liability

Answer: B
Explanation: Writing defamatory words is known as libel.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty; 10.b Demonstrate professional behavior

28) Which device recognizes an abnormal rhythm and can deliver an electric shock to the heart if necessary?
A) ECG
B) CAD
C) MSET
D) AED

Answer: D
Explanation: An automatic external defibrillator (AED) is a device that analyzes the heart rhythm and determines whether it is considered a "shockable" rhythm.
Difficulty: 1 Easy
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.d Define and use medical abbreviations when appropriate and acceptable; 2.c Identify diagnostic and treatment modalities as they relate to each body system

29) PPE is used to reduce the risk of transmission of infection. PPE stands for:
A) personal protective equipment.
B) possible percutaneous exposure.
C) pulmonary protection equipment.
D) patient protective electrocardiograph.

Answer: A
Explanation: Personal protection equipment (PPE) includes items such as gloves, mask, gown, and eye protection.
Difficulty: 1 Easy
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

30) The problem-solving process includes which of the following steps?
A) Identify and define the problem.
B) Inform the patient of the problem.
C) Report the problem to a supervisor.
D) Obtain informed consent from the patient.

Answer: A
Explanation: The problem-solving process involves identifying and defining the problem, identifying possible solutions, selecting the best solution, implementing the selected solution, evaluating the results, and repeating these steps until an acceptable solution is reached.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation

31) When caring for patients and recording an ECG, you may encounter many situations that require you to:
A) think critically about the situation.
B) perform the ECG before getting the patient's informed consent.
C) not worry about what the patient may tell you.
D) ask a supervisor to perform the ECG.

Answer: A
Explanation: Being able to troubleshoot situations that may arise during the ECG procedure is essential. Troubleshooting requires critical thinking.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation

32) Which of the following include measures to ensure that patients' health information is protected?
A) Standard precautions
B) Isolation precautions
C) HIPAA
D) CDC

Answer: C
Explanation: In 1996, the Health Insurance Portability and Accountability Act (HIPAA) was established to ensure that patient information was secure and private.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 4.h Demonstrate compliance with HIPAA guidelines, the ADA Amendments Act, and the Health Information Technology for Economic and Clinical Health (HITECH) Act

33) Procedures that are used with all patients to prevent the spread of infection are:
A) airborne precautions.
B) standard precautions.
C) contact precautions.
D) droplet precautions.

Answer: B
Explanation: Standard precautions include hand hygiene and wearing gloves when there is a possibility of exposure to blood and body fluids, non-intact skin, or mucous membranes. They are used with all patients to help prevent the spread of infection.
Difficulty: 1 Easy
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

34) You have just finished performing an ECG on a hospital patient who is known to have a Clostridium difficile infection when you are called to perform a stat ECG in the emergency department. Which of the following is your best course of action?
A) Proceed to the emergency department immediately to perform the ECG.
B) Quickly apply an alcohol-based hand rub while you are on your way to the emergency department.
C) Remove all PPE and wash your hands thoroughly before proceeding to the emergency department.
D) Wash your hands but leave the PPE in place to save time because you may need it for the emergency patient as well.

Answer: C
Explanation: *Clostridium difficile* infections require handwashing because alcohol-based rubs cannot kill all the infectious organisms. You must wash your hands thoroughly before performing an ECG on another patient. Never wear the same PPE for two different patients.
Difficulty: 3 Hard
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Apply
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

35) You have been asked to perform an ECG on a hospital patient in ICU. When you reach the patient's room, you notice that the patient is under airborne precautions. In addition to gloves, which of the following PPE should you wear while you perform the ECG?
A) Gown
B) Goggles
C) Face mask
D) HEPA respirator

Answer: D
Explanation: Airborne precautions require special air handling, ventilation, and additional respiratory protection, such as a HEPA or N95 respirator.
Difficulty: 2 Medium
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Apply
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

36) An electrocardiograph is a(n):
A) electrical tracing of the heart's activity.
B) picture of the heart recorded using ultrasound.
C) instrument used to record blood flow through the heart.
D) instrument used to record a tracing of the heart's electrical activity.

Answer: D
Explanation: An electrocardiograph is an instrument that is used to record an electrocardiogram (ECG), which is a tracing or graph of the heart's electrical activity.
Difficulty: 1 Easy
Topic: The ECG and Its History
Learning Objective: 01.01 Describe the history and the importance of the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

37) Narrowing of the arteries that supply the heart with blood is a condition known as:
A) myocardial infarction.
B) coronary artery disease.
C) dysrhythmia.
D) hypotension.

Answer: B
Explanation: Coronary artery disease, or CAD, is the narrowing of the arteries that supply the heart with blood carrying nutrients and oxygen.
Difficulty: 2 Medium
Topic: History and Importance
Learning Objective: 01.01 Describe the history and the importance of the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

38) The second level of procedures implemented by the Centers for Disease Control and Prevention (CDC) to prevent infections is known as:
A) isolation precautions.
B) vital signs.
C) body mechanics.
D) standard precautions.

Answer: A
Explanation: The CDC has implemented two levels of precautions to prevent infection. The first level, used with all patients, is called standard precautions. The second level, isolation precautions, includes contact, airborne, and droplet precautions. Isolation precautions are used on an as-needed basis for individual patients.
Difficulty: 1 Easy
Topic: Infection Control
Learning Objective: 01.01 Describe the history and the importance of the ECG.; 01.04 Perform infection control measures required for the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

39) The single most important thing you can do to prevent the spread of infection while performing ECGs is to:
A) wear appropriate PPE.
B) perform proper hand hygiene.
C) follow standard precautions.
D) follow isolation precautions.

Answer: B
Explanation: Proper hand hygiene is critical to preventing the spread of infection. Wash your hands or, if appropriate, use an alcohol-based hand rub between patients and procedures and before and after you use gloves.
Difficulty: 1 Easy
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

40) The use of an alcohol-based hand rub for hand hygiene is appropriate:
A) when there is no visible soilage on your hands.
B) after a patient sneezes, spraying your ungloved hands.
C) whenever your hands look and feel dirty.
D) after accidental direct contact with blood or body fluids.

Answer: A
Explanation: The use of an alcohol-based hand rub is acceptable only when there is no visible soilage on your hands. If dirt, blood, or any other body fluid is present, you must wash your hands.
Difficulty: 2 Medium
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

41) Which of the following statements best describes the action you should take after performing an ECG on an accident patient whose chest is abraded and bloody?
A) Clean the electrodes thoroughly before using them on another patient.
B) Use a mild soap to clean the ECG machine without harming its sensitive electronics.
C) Clean, disinfect, or sterilize all reusable equipment before using it again.
D) Wash your hands thoroughly before cleaning the ECG machine.

Answer: C
Explanation: Whenever the ECG machine may have come into contact with blood, body fluids, secretions, or excretions, it is important to clean, disinfect, or sterilize all reusable parts before using it on another person. Electrodes are usually disposable and should be discarded immediately.
Difficulty: 3 Hard
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

42) Which of the following items is *not* included in an assessment of a patient's vital signs?
A) Respiration
B) Pain assessment
C) Level of consciousness
D) Blood pressure

Answer: C
Explanation: Level of consciousness is important and would be noted, but the five vital signs include pulse, respiration, blood pressure, temperature, and pain assessment.
Difficulty: 2 Medium
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 8.b Obtain vital signs, obtain patient history, and formulate chief complaint

43) The normal range for respirations in adults is:
A) 12 to 20 respirations per minute.
B) 22 to 30 respirations per minute.
C) 40 to 50 respirations per minute.
D) 60 to 100 respirations per minute.

Answer: A
Explanation: The normal range of respirations for an adult is 12 to 20 respirations per minute.
Difficulty: 2 Medium
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 8.b Obtain vital signs, obtain patient history, and formulate chief complaint

44) The amount of blood the heart pumps each minute is known as the:
A) diastolic blood pressure.
B) systolic blood pressure.
C) pulse.
D) cardiac output.

Answer: D
Explanation: A weak, irregular, or otherwise abnormal pulse may cause a patient to show signs of low cardiac output, which is the amount of blood the heart pumps per minute.
Difficulty: 2 Medium
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

45) The adult pulse is most commonly measured at the:
A) brachial artery at the antecubital space.
B) radial artery at the wrist.
C) temporal artery at the forehead.
D) carotid artery at the neck.

Answer: B
Explanation: The most commonly used site for measuring the adult pulse is the radial artery at the wrist. If a pulse cannot be felt at the wrist of a weak or unstable patient, the carotid artery on the side of the neck can be used.
Difficulty: 1 Easy
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.b Obtain vital signs, obtain patient history, and formulate chief complaint

46) For how long should you count a patient's respirations?
A) 15 seconds
B) 30 seconds
C) 45 seconds
D) 60 seconds

Answer: D
Explanation: You should count respirations for a full minute to determine the rate, rhythm, and effort of the patient's breathing.
Difficulty: 1 Easy
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.b Obtain vital signs, obtain patient history, and formulate chief complaint

47) A person who has tachypnea is:
A) breathing deeply.
B) breathing rapidly.
C) having trouble breathing.
D) finding it painful to breathe.

Answer: B
Explanation: Tachypnea (*tachy* = fast; *pnea* = breathing) is a condition in which the patient is breathing rapidly.
Difficulty: 2 Medium
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

48) A patient who is having difficulty breathing is said to have:
A) hyperpnea.
B) tachypnea.
C) dyspnea.
D) apnea.

Answer: C
Explanation: Dyspnea is a condition in which the patient finds it difficult or painful to breathe.
Difficulty: 2 Medium
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

49) The force at which blood is pumped against the walls of the arteries is a person's:
A) cardiac output.
B) blood pressure.
C) stroke volume.
D) pulse.

Answer: B
Explanation: Blood pressure is the force with which blood is pumped against the walls of a person's arteries.
Difficulty: 1 Easy
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

50) The minimum amount of pressure that is exerted against the walls of blood vessels at all times is the:
A) diastolic blood pressure.
B) systolic blood pressure.
C) cardiac output.
D) pulse.

Answer: A
Explanation: The pressure measured when the heart relaxes is the diastolic blood pressure, which is the minimum pressure exerted against the blood vessel walls at all times.
Difficulty: 2 Medium
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

51) All of the following factors can affect a person's blood pressure *except*:
A) blood volume.
B) blood type.
C) cardiac output.
D) blood thickness.

Answer: B
Explanation: Blood volume, cardiac output, vasoconstriction, and blood viscosity are examples of factors that can affect blood pressure. Blood type has no significant effect.
Difficulty: 2 Medium
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.b Obtain vital signs, obtain patient history, and formulate chief complaint

52) During her last two doctor appointments, a patient's blood pressure was measured at 160/92 and 156/94. The physician has not been able to identify a cause for these blood pressure readings. This patient has:
A) hypotension.
B) low cardiac output.
C) essential hypertension.
D) secondary hypertension.

Answer: C
Explanation: Both of the blood pressure readings are above the normal range, so this patient has hypertension. Since there is no identifiable cause, the patient has essential hypertension.
Difficulty: 3 Hard
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Apply
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

53) To measure a patient's blood pressure, you would place the blood pressure cuff:
A) midway between the wrist and the elbow.
B) around the antecubital space at the elbow.
C) 1 to 2 inches above the antecubital space.
D) 3 to 4 inches above the antecubital space.

Answer: C
Explanation: Place the blood pressure cuff of the sphygmomanometer around the patient's upper arm, 1 to 2 inches above the pulse point of the brachial artery, which is located at the antecubital space.
Difficulty: 2 Medium
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.b Obtain vital signs, obtain patient history, and formulate chief complaint

54) The reason for determining a patient's palpatory blood pressure is:
A) because it is faster and more accurate than using a stethoscope to measure blood pressure.
B) to ensure that the patient's cardiac output is sufficient before measuring blood pressure.
C) to find the patient's vein so that you can place the stethoscope accurately.
D) to avoid over- or underinflation of the blood pressure cuff.

Answer: D
Explanation: The palpatory blood pressure represents the target peak inflation of the blood pressure cuff. It ensures adequate inflation when the actual measurement is made, and also helps avoid overinflation, which is uncomfortable for the patient.
Difficulty: 3 Hard
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 8.b Obtain vital signs, obtain patient history, and formulate chief complaint

55) A blood pressure measurement that is determined using a sphygmomanometer and a stethoscope is known as a(n):
A) palpatory blood pressure.
B) systolic blood pressure.
C) diastolic blood pressure.
D) auscultated blood pressure.

Answer: D
Explanation: An auscultated blood pressure is a blood pressure measurement determined while listening with a stethoscope.
Difficulty: 2 Medium
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 8.b Obtain vital signs, obtain patient history, and formulate chief complaint

56) One out of every _____ American adults has some form of coronary artery disease.
A) five
B) three
C) six
D) ten

Answer: B
Explanation: One out of every three American adults has some form of coronary artery disease.
Difficulty: 2 Medium
Topic: History and Importance
Learning Objective: 01.01 Describe the history and the importance of the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation

57) Cardiac dysrhythmias are:
A) the natural rhythm of the heart.
B) abnormal heartbeats.
C) the natural result of physical activity.
D) considered normal in pediatric patients.

Answer: B
Explanation: A cardiac dysrhythmia is an abnormal heartbeat, which may indicate a serious heart disease that needs immediate treatment.
Difficulty: 2 Medium
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

58) Slander and libel are:
A) nearly impossible to prove.
B) ethical but not illegal.
C) illegal but not unethical.
D) both illegal and unethical.

Answer: D
Explanation: Slander and libel are both illegal and unethical; committing slander or libel could cause you to lose your job.
Difficulty: 1 Easy
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

59) If a patient refuses to sign the informed consent form for an ECG, a good example of troubleshooting is to:
A) have a witness present and carry on with the procedure.
B) explain to the patient how the procedure works in order to get his/her consent.
C) have a relative sign the consent form.
D) put an X on the consent form to indicate that the patient was not competent.

Answer: B
Explanation: If a patient refuses to sign the informed consent form, you should troubleshoot by finding out why the patient is refusing. Explain the procedure carefully and calm the patient's fears.
Difficulty: 1 Easy
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 10.b Demonstrate professional behavior

60) Which of the following is *not* a specific type of isolation precaution implemented for hospitalized patients?
A) AIDS precautions
B) Droplet precautions
C) Airborne precautions
D) Contact precautions

Answer: A
Explanation: The three types of isolation identified by the Centers for Disease Control and Prevention are airborne, droplet, and contact isolation.
Difficulty: 2 Medium
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

61) Which of the following is *least* likely to help the ECG technician maintain infection control while performing an ECG procedure?
A) Use standard precautions.
B) Wash hands prior to the procedure.
C) Wear gloves if there is a risk of exposure to the patient's blood or other body fluids.
D) Be sure the patient is not touching the bed frame.

Answer: D
Explanation: You must practice standard precautions at all times. Wash your hands carefully before and after the procedure. Wear gloves if there is a risk of exposure to blood or body fluids. Ensuring that the patient is not touching the bed frame is a safety precaution, but it does not contribute to infection control.
Difficulty: 2 Medium
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

62) You have been asked to perform an ECG on a patient who is known to be infected by the varicella virus. You have not had chickenpox, and you have not been vaccinated against it. What should you do?
A) Observe the usual standard precautions while performing the ECG.
B) Wear gloves and respiratory protection while performing the ECG.
C) Wear gloves and eye protection while performing the ECG.
D) Wear a disposable gown while performing the ECG.

Answer: B
Explanation: If you are susceptible to varicella, it is best not to enter the room at all, but if you must enter the room, follow airborne precautions, wearing respiratory protection as well as gloves.
Difficulty: 2 Medium
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

63) You have been asked to perform an ECG on a hospital patient who is known to have infectious pulmonary tuberculosis. Which of the following precautions should you take?
A) Standard precautions only
B) Standard precautions and airborne precautions
C) Standard precautions and droplet precautions
D) Standard precautions and contact precautions

Answer: B
Explanation: You should take airborne precautions, including wearing a HEPA N-95, N-99, or N-100 mask for respiratory protection.
Difficulty: 2 Medium
Topic: Infection Control
Learning Objective: 01.04 Perform infection control measures required for the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 8.a Practice standard precautions and perform disinfection/sterilization techniques

64) A patient complains of feeling lightheaded and having frequent fainting spells. Which test might the physician order to determine whether a drop in heart rate or blood pressure may be causing the patient's symptoms?
A) Holter monitoring
B) Angiogram
C) Tilt table test
D) ECG

Answer: C
Explanation: A tilt table test may be ordered for a patient complaining of dizziness, lightheadedness, or frequent fainting episodes to determine the heart's response to a sudden change in elevation.
Difficulty: 1 Easy
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Remember
Accessibility: Keyboard Navigation
ABHES: 2.c Identify diagnostic and treatment modalities as they relate to each body system

65) Which of the following monitoring methods is performed while the patient is outside of the hospital/clinical setting?
A) Stress test
B) Telemetry
C) Pacemaker implantation
D) Transtelephonic monitoring

Answer: D
Explanation: Trans- means "across," so transtelephonic means "across the telephone lines."
Difficulty: 1 Easy
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 3.c Apply medical terminology for each specialty

66) What is the approximate size and shape of the smallest transtelephonic monitor?
A) Pencil eraser
B) Candy bar
C) Jump drive or credit card
D) Pack of cigarettes

Answer: C
Explanation: The smallest transtelephonic monitor currently available is about the size of a jump drive or credit card.
Difficulty: 1 Easy
Topic: Uses of an ECG
Learning Objective: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.
Bloom's: Understand
Accessibility: Keyboard Navigation

67) Which of the following is most important to perform prior to performing an ECG?
A) Explain to the patient what you are going to do before you do it
B) Take your assigned break
C) Remove your gloves
D) Don a mask

Answer: A
Explanation: Communicate appropriately with the patient to be sure that he or she understands the procedure.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 5.h Display effective interpersonal skills with patients and health care team members

68) The term ethics is defined as:
A) Standards of behavior and concepts of right and wrong
B) The principles and regulations established in a community by some authority
C) Something that is handed down
D) The limit which the law allows for specific education and experience, to perform certain acts

Answer: A
Explanation: Ethics include accepted concepts of right and wrong and standards of behavior.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 5.f Demonstrate an understanding of the core competencies for Interprofessional Collaborative Practice i.e. values/ethics; roles/responsibilities; interprofessional communication; teamwork

69) Medical record documentation requires all the following EXCEPT:
A) Medications and prescriptions
B) Patient's medical history
C) Physician examination and results
D) Foster parent medical history

Answer: D
Explanation: Medical record documentation does not require the medical history of foster parents.
Difficulty: 2 Medium
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 4.a Follow documentation guidelines

70) Which of the following techniques is the BEST demonstration of proper body mechanics?
A) Lift with your legs, not your back
B) Always move patients without assistance
C) Face in the opposite direction that you intend to move
D) Keep heavy weights as far away from your body as possible

Answer: A
Explanation: To protect your back, lift with your legs, not your back.
Difficulty: 1 Easy
Topic: Preparing for an ECG
Learning Objective: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation

71) Which of the following types of hypertension has no known cause?
A) Essential (Idiopathic)
B) Adventitious
C) Secondary
D) Hypovolemic

Answer: A
Explanation: Essential hypertension has no known cause.
Difficulty: 2 Medium
Topic: Vital Signs
Learning Objective: 01.05 Compare basic vital sign measurements related to the ECG.
Bloom's: Understand
Accessibility: Keyboard Navigation
ABHES: 2.b Describe common diseases, symptoms, and etiologies as they apply to each system