

## Chapter 01 Electrocardiography

### Multiple Choice Questions

1. What is the number one cause of death in the United States?

- A. Cancer
- B. Diabetes
- C. Cardiovascular disease**
- D. Accidents

Cardiovascular disease has been the number one cause of death in the United States since 1918.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 1 Easy*

*Learning Outcome: 01.01 Describe the history and importance of the ECG.*

*Topic: History and Importance*

2. The abbreviation CAD stands for:

- A. cold appendage disorder.
- B. coronary application disease.
- C. cerebral artery disease.
- D. coronary artery disease.**

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 1 Easy*

*Learning Outcome: 01.01 Describe the history and importance of the ECG.*

*Topic: History and Importance*

3. (p. 2) What does the electrocardiogram or ECG study?

- 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

The electrocardiograph produces an electrical tracing of the heart. This tracing is known as the ECG.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 1 Easy*

*Learning Outcome: 01.01 Describe the history and importance of the ECG.*

*Topic: History and Importance*

4. The first electrocardiograph was invented by:

- A. Sir Thomas Lewis.
- B.** Wilhelm Einthoven.
- C. Thomas Edison.
- D. Dr. James Herrick.

In 1903, Wilhelm Einthoven invented the first electrocardiograph.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 1 Easy*

*Learning Outcome: 01.01 Describe the history and importance of the ECG.*

*Topic: History and Importance*

5. The abbreviation for myocardial infarction, also known as a heart attack, is:

- A. IM.
- B. HA.
- C. MI.**
- D. MCI.

MI is the abbreviation for myocardial infarction.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 1 Easy*

*Learning Outcome: 01.01 Describe the history and importance of the ECG.*

*Topic: History and Importance*

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.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Opportunities for an Electrocardiographer*

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.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Opportunities for an Electrocardiographer*

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

An emergency ECG may be referred to as "stat," meaning immediately.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 1 Easy*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Uses of ECG*

9. Continuous ECG monitoring done in a hospital setting is known as:

- A. Holter monitoring.
- B. telemetry monitoring.**
- C. exercise electrocardiography.
- D. echocardiography.

Another type of continuous monitoring done in the hospital is known as telemetry monitoring. Telemetry monitors are small boxes with electrodes and lead wires attached to the chest.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 1 Easy*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Uses of ECG*

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**

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Uses of ECG*

11. For which of the following symptoms might a telemedicine monitor be used?

- A. Headache
- B. Fever
- C. Dizziness**
- D. Nausea

It is useful to record the ECG tracings on a telemedicine monitor when the patient has symptoms. These symptoms include chest pain, shortness of breath, dizziness, or palpitations.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Uses of ECG*

12. 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

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Uses of ECG*

13. Which of the following topics is the *least* important for an ECG technician to understand?

- A. Medical law and ethics
- B. Patient safety and infection control
- C. The procedure and the ECG machine
- D. Detailed evaluation of ECG results**

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 safety and infection control, patient education and communication, and law and ethics. Only the physician can evaluate ECG results.

*ABHES: 11.b.4 Demonstrate professional behavior*

*ABHES: 4.f Comply with federal, state, and local health laws and regulations as they relate to healthcare settings*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: X.C.1 Differentiate between legal, ethical, and moral issues affecting healthcare*

*Difficulty: 2 Medium*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Legal and Ethical Issues*

*Topic: Opportunities for an Electrocardiographer*

14. 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

Standard precautions include hand hygiene and wearing gloves. It may include the use of a gown, mask, and eye protection.

*ABHES: 9.b Obtain vital signs, obtain patient history, and formulate chief complaint*

*ABHES: 9.i Practice standard precautions and perform disinfection/sterilization techniques*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: III.C.11 Describe Standard Precautions, including:*

*CAAHEP: III.C.3 Discuss infection control procedures*

*CAAHEP: III.P.2 . Practice Standard Precautions*

*Difficulty: 2 Medium*

*Learning Outcome: 01.04 Perform safety and infection control measures required for the ECG.*

*Topic: Safety and Infection Control*

15. 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.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Patient Education and Communication*

16. 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.

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.

*ABHES: 11.b.4 Demonstrate professional behavior*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: X.C.1 Differentiate between legal, ethical, and moral issues affecting healthcare*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Legal and Ethical Issues*



17. 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.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: IX.C.3 Describe the implications of HIPAA for the medical assistant in various medical settings*

*CAAHEP: IX.P.3 Apply HIPAA rules in regard to privacy/release of information*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Legal and Ethical Issues*

18. Which of the following defines practicing ethics as a health care professional?

- A. Maintaining professional liability insurance
- B. Educating patients about the ECG procedure
- C. Maintaining patient confidentiality
- D. Troubleshooting the ECG machine

Confidentiality is a basic right of every patient. A breach in confidentiality is both unethical and illegal.

*ABHES: 11.b.3 Demonstrate professional behavior*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: X.C.1 Differentiate between legal, ethical, and moral issues affecting healthcare*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Legal and Ethical Issues*

19. 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

Informed consent requires the patient to sign a consent form that he or she understands the risks involved with certain diagnostic procedures.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Patient Education and Communication*

20. 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 you will not plug the ECG machine into the wall outlet.
- D. go get the doctor and have him explain the procedure to the patient.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Patient Education and Communication*

21. 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

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Patient Education and Communication*

22. 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.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Patient Education and Communication*

23. The term for an abnormal heartbeat is:

- A. angioplasty.
- B. dysrhythmia.**
- C. myocardial infarction.
- D. coronary artery disease.

A dysrhythmia is an abnormal heartbeat.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 1 Easy*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Uses of ECG*

24. 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.**

The term "Code Blue" is used by many institutions to indicate that a patient is having cardiac, respiratory, or neurological symptoms; is unresponsive; and needs immediate help.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 2 Medium*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Opportunities for an Electrocardiographer*

25. 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

A Holter monitor is an instrument that records the electrical activity of the heart during a patient's routine daily activities.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 2 Medium*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Uses of ECG*

26. 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

An angiogram is an invasive procedure that determines whether a coronary artery or blood vessel has a blockage.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Uses of ECG*

27. 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.

Making derogatory remarks about someone that jeopardizes his or her reputation or means of livelihood is called *slander*.

*ABHES: 11.b.4 Demonstrate professional behavior*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: X.C.1 Differentiate between legal, ethical, and moral issues affecting healthcare*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Legal and Ethical Issues*

28. \_\_\_\_\_ 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

Writing defamatory words is known as libel.

*ABHES: 11.b.4 Demonstrate professional behavior*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: X.C.1 Differentiate between legal, ethical, and moral issues affecting healthcare*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Legal and Ethical Issues*

29. 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**

An automatic external defibrillator (AED) is a device that analyzes the heart rhythm and indicates if an electrical shock needs to be given to correct the irregular rhythm.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 1 Easy*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Uses of ECG*

30. 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.

Personal protection equipment (PPE) includes items such as gloves, mask, gown, and eye protection.

*ABHES: 9.b Obtain vital signs, obtain patient history, and formulate chief complaint*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: III.C.3 Discuss infection control procedures*

*CAAHEP: XI.C.1 Describe personal protective equipment*

*Difficulty: 1 Easy*

*Learning Outcome: 01.04 Perform safety and infection control measures required for the ECG.*

*Topic: Safety and Infection Control*

31. 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.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Patient Education and Communication*

32. 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.

Being able to troubleshoot situations that may arise during the ECG procedure is essential. Troubleshooting requires critical thinking.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Patient Education and Communication*



33. Which of the following include measures to ensure that patients' health information is protected?

- A. Standard precautions
- B. Isolation procedures
- C. HIPAA**
- D. CDC

In 1996, the Health Insurance Portability and Accountability Act (HIPAA) was established to ensure that patient information was secure and private.

*ABHES: 11.b.3 Demonstrate professional behavior*

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: IX.C.3 Describe the implications of HIPAA for the medical assistant in various medical settings*

*CAAHEP: IX.P.3 Apply HIPAA rules in regard to privacy/release of information*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Legal and Ethical Issues*

34. Which of the following communication techniques helps to ensure a successful ECG recording?

- A. Explain the ECG procedure using correct medical terminology.
- B. Encourage the patient to ask questions.
- C. Ask the patient to read a brochure on ECGs.
- D. Tell the patient it is okay to be anxious.**

You must develop a positive relationship and atmosphere to reduce apprehension and anxiety during an ECG. Helping the patient understand the procedure and follow instructions is essential to performing the ECG.

*ABHES: 8.c Process insurance claims*

*ABHES: 8.ii Perform billing and collection procedures*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: IV.A.7 Demonstrate recognition of the patient's level of understanding in communications*

*Difficulty: 2 Medium*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Patient Education and Communication*

35. Using proper body mechanics includes:

- A. using the muscles in your back to lift heavy objects.
- B. following proper hand hygiene.
- C.** using movements that maintain your posture.
- D. holding heavy objects as far from your body as possible.

Proper body mechanics includes using movements that maintain your posture to avoid muscle and bone injuries. Lift with your legs, not your back, and hold heavy objects as close to your body as possible.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: XI.C.10 Identify principles of body mechanics and ergonomics.*

*CAAHEP: XI.P.11 Use proper body mechanics*

*Difficulty: 2 Medium*

*Learning Outcome: 01.04 Perform safety and infection control measures required for the ECG.*

*Topic: Safety and Infection Control*

36. 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.

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.

*ABHES: 9.i Practice standard precautions and perform disinfection/sterilization techniques*

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: III.C.11 Describe Standard Precautions, including:*

*CAAHEP: III.C.12 Discuss the application of Standard Precautions with regard to*

*Difficulty: 1 Easy*

*Learning Outcome: 01.04 Perform safety and infection control measures required for the ECG.*

*Topic: Safety and Infection Control*

37. 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.

*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.

*ABHES: 9.b Obtain vital signs, obtain patient history, and formulate chief complaint*

*ABHES: 9.i Practice standard precautions and perform disinfection/sterilization techniques*

*Accessibility: Keyboard Navigation*

*Bloom's: Apply*

*CAAHEP: III.C.11 Describe Standard Precautions, including:*

*CAAHEP: III.C.3 Discuss infection control procedures*

*CAAHEP: III.P.2 . Practice Standard Precautions*

*Difficulty: 3 Hard*

*Learning Outcome: 01.04 Perform safety and infection control measures required for the ECG.*

*Topic: Safety and Infection Control*

38. 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

Airborne precautions require special air handling, ventilation, and additional respiratory protection, such as a HEPA or N95 respirator.

*ABHES: 9.b Obtain vital signs, obtain patient history, and formulate chief complaint*

*Accessibility: Keyboard Navigation*

*Bloom's: Apply*

*CAAHEP: III.C.11 Describe Standard Precautions, including:*

*CAAHEP: III.C.3 Discuss infection control procedures*

*CAAHEP: III.P.3 Select appropriate barrier/personal protective equipment (PPE) for potentially infectious situations*

*Difficulty: 2 Medium*

*Learning Outcome: 01.04 Perform safety and infection control measures required for the ECG.*

*Topic: Safety and Infection Control*

39. 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.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 1 Easy*

*Learning Outcome: 01.01 Describe the history and the importance of the ECG.*

*Topic: History and Importance*

40. 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.

Coronary artery disease, or CAD, is the narrowing of the arteries that supply the heart with blood carrying nutrients and oxygen.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 2 Medium*

*Learning Outcome: 01.01 Describe the history and the importance of the ECG.*

*Topic: History and Importance*

41. The second level of procedures implemented by the Centers for Disease Control and Prevention (CDC) to prevent infections is known collectively as:

- A. isolation precautions.**
- B. vital signs.
- C. body mechanics.
- D. standard precautions.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: III.C.11.a Describe Standard Precautions, including: transmission based precautions*

*Difficulty: 1 Easy*

*Learning Outcome: 01.04 Perform safety and infection control measures required for the ECG.*

*Topic: Safety and Infection Control*

42. 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.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: III.C.3 Discuss infection control procedures*

*CAAHEP: III.P.4 Perform handwashing*

*Difficulty: 1 Easy*

*Learning Outcome: 01.04 Perform safety and infection control measures required for the ECG.*

*Topic: Safety and Infection Control*

43. 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.

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.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: III.C.11 Describe Standard Precautions, including:*

*CAAHEP: III.C.12 Discuss the application of Standard Precautions with regard to*

*CAAHEP: III.C.3 Discuss infection control procedures*

*Difficulty: 2 Medium*

*Learning Outcome: 01.04 Perform safety and infection control measures required for the ECG.*

*Topic: Safety and Infection Control*

44. Which of the following statements best describes the standard precautions 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.

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.

*ABHES: 9.i Practice standard precautions and perform disinfection/sterilization techniques*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: III.C.11 Describe Standard Precautions, including:*

*CAAHEP: III.C.12 Discuss the application of Standard Precautions with regard to*

*CAAHEP: III.C.3 Discuss infection control procedures*

*Difficulty: 3 Hard*

*Learning Outcome: 01.04 Perform safety and infection control measures required for the ECG.*

*Topic: Safety and Infection Control*

45. 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

Level of consciousness is important and would be noted, but the five vital signs include pulse, respiration, blood pressure, temperature, and pain assessment.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 2 Medium*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

46. 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.

The normal range of respirations for an adult is 12 to 20 respirations per minute.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 2 Medium*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

47. 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.

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.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 2 Medium*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*



48. 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.

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.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 1 Easy*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

49. For how long should you count a patient's respirations?

- A. 15 seconds
- B. 30 seconds
- C. 45 seconds
- D. 60 seconds**

You should count respirations for a full minute to determine the rate, rhythm, and effort of the patient's breathing.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 1 Easy*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

50. A person who has tachypnea is:

- A. breathing deeply.
- B. breathing rapidly.**
- C. having trouble breathing.
- D. finding it painful to breathe.

Tachypnea (*tachy* = fast; *pnea* = breathing) is a condition in which the patient is breathing rapidly.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 2 Medium*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

51. A patient who is having difficulty breathing is said to have:

- A. hyperpnea.
- B. tachypnea.
- C. dyspnea.**
- D. apnea.

Dyspnea is a condition in which the patient finds it difficult or painful to breathe.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 2 Medium*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

52. The force with 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.

Blood pressure is the force with which blood is pumped against the walls of a person's arteries.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 1 Easy*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

53. 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.

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.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 2 Medium*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

54. 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.

Blood volume, cardiac output, vasoconstriction, and blood viscosity are examples of factors that can affect blood pressure. Blood type has no significant effect.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 2 Medium*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

55. 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.

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.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Apply*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 3 Hard*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

56. To measure a patient's blood pressure, you would place the sphygmomanometer:

- 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.

Place the blood pressure cuff, or 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.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 2 Medium*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

57. 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.**

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.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 3 Hard*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

58. 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.

An auscultated blood pressure is a blood pressure measurement determined while listening with a stethoscope.

*ABHES: 9.c Assist provider with general/physical examination*

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*CAAHEP: I.P.1 Obtain vital signs*

*Difficulty: 2 Medium*

*Learning Outcome: 01.05 Compare basic vital sign measurements related to the ECG.*

*Topic: Vital Signs*

59. One out of every \_\_\_\_ American adults has some form of coronary artery disease.

- A. five
- B.** three
- C. six
- D. ten

One out of every three American adults has some form of coronary artery disease.

*Accessibility: Keyboard Navigation*

*Bloom's: Remember*

*Difficulty: 2 Medium*

*Learning Outcome: 01.01 Describe the history and the importance of the ECG.*

*Topic: History and Importance*

60. 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.

A cardiac dysrhythmia may indicate a serious heart disease that needs immediate treatment.

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 2 Medium*

*Learning Outcome: 01.02 Identify the uses of an ECG and opportunities for an electrocardiographer.*

*Topic: Uses of ECG*

61. Slander and libel are:

- A. nearly impossible to prove.
- B. ethical but not illegal.
- C. illegal but not unethical.
- D. both illegal and unethical.**

Slander and libel are both illegal and unethical; committing slander or libel could cause you to lose your job.

*ABHES: 11.b.4 Demonstrate professional behavior*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*CAAHEP: X.C.1 Differentiate between legal, ethical, and moral issues affecting healthcare*

*Difficulty: 1 Easy*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Legal and Ethical Issues*

62. 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.

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.

*ABHES: 11.b.8 Demonstrate professional behavior*

*Accessibility: Keyboard Navigation*

*Bloom's: Understand*

*Difficulty: 1 Easy*

*Learning Outcome: 01.03 Troubleshoot legal, ethical, patient education, and communication issues related to the ECG.*

*Topic: Patient Education and Communication*