2018 National Metal and Nonmetal Mine Rescue Contest

First Aid Competition
Written Test

Directions:

1. **Find the correct answer to each of the questions.**
2. **Select only one answer per question.**
3. **Then, fill in the corresponding circle on the answer sheet for each numbered question.**

Good Luck!

July 23, 2018

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1. One way emergency medical responders can minimize the risk of acquiring an infectious disease is to:

    a. Hold their breath while treating patients suspected of communicable disease
    b. Become immunized from pathogens typically found in EMS
    c. Work closely with other, more experienced responders and practice your skills
    d. Get a measles vaccine

2. Body substance isolation precautions are specific steps to:

    a. Separate patients in triage to prevent exposure to air borne pathogens
    b. Help minimize exposure to a patient's body fluid and attitude
    c. Help minimize exposure to a patient's blood and body fluids
    d. Insure the patient is protected from coffee ground emesis

3. There are many diseases that can affect the respiratory system. Diseases can disrupt the circulation of the blood from picking up _____ and dropping off _____.

    a. Oxygen/carbon dioxide
    b. Alveoli/hydrocarbon
    c. Oxygen/carbon oxide
    d. Oxygen/neumocarbons

4. Many first responders are injured every year because they attempt to move a patient improperly. The technique of lifting with your legs, keeping your back as straight as possible and bending at your knees is known as:

    a. Extremity lift
    b. Power lift
    c. Shoulder drag
    d. Stair carry

5. The autonomic nervous system is the part of the peripheral nervous system that acts as the control system for most of the involuntary processes such as heart rate, respiratory rate, digestion, perspiration and salivation.

    a. True
    b. False

6. A typical oxygen-delivery system includes a _____, a regulator, and a delivery device. Occasionally a humidifier will be added to provide moisture to the oxygen if the patient will be on the system for an extended time:

    a. Pressure regulator
    b. humidifier
    c. Pulse oximeter
    d. Oxygen source

7. When clearing a foreign body airway obstruction on an unresponsive adult, you should _____:

    a. After each set of 30 compressions, open the airway and check for evidence of a foreign object
    b. Place the patient face down (prone) on a firm surface and tap and shout
    c. Attempt five chest thrusts and five back blows
    d. Make a fist and give up to five abdominal thrusts

8. During CPR you must:

    a. Ensure and maintain an open airway
    b. Breathe for (ventilate) the patient
    c. Perform rapid, deep chest compressions to circulate the blood
    d. All of the above

9. Agonal breathing is:

    a. Apparent with patients of a heart rate of 60 BPM
    b. An abnormal breathing pattern
    c. A normal breathing pattern in adults
    d. Characterized by fast, deep breaths which typically occur after exercise

10. Effective CPR depends on the correct rate and ratio of compressions to ventilations. If no barrier is available, deliver compressions at a rate of _____:

    a. 30 compressions five times per minute
    b. 30 compressions over the span of 30 seconds
    c. 100 to 120 per minute
    d. 30 compressions with 10 second breaks between sets

11. For effective CPR, limit necessary interruptions such as pulse and breathing checks to no more than 20 seconds.

    a. True
    b. False

12. Automatic External Defibrillators (AED) save lives. However, there are some basic warnings for use. Place the AED only on a patient who is_____.

    a. Choking
    b. Semi-conscious and complaining of chest pain
    c. Seated
    d. In cardiac arrest

13. Obtaining a medical history can be achieved with the SAMPLE history tool. The L in the acronym means_____:

    a. Last oral excretion
    b. Last oral intake
    c. Leading event to the injury
    d. Level of pain

14. Respiration or ventilation is the act or process of breathing. You will evaluate several characteristics when assessing a patient's respirations;

    a. Rate, depth, sound and ease
    b. Rate, perspiration, height, and cycle
    c. Breaths per minute, skin color, verbal responses
    d. Breaths per minute, responsiveness, labor

15. The average pulse rate for an adult is 60 to 100:

    a. True
    b. False

16. When caring for a responsive patient, you can check the radial pulse at the patient's wrist. For an unresponsive patient, the _____ in the neck should be used:

    a. Brachial pulse
    b. Cardiogenic pulse
    c. Cardiac pulse
    d. Carotid pulse

17. Determining blood pressure by palpation (feeling the radial pulse) is not a very accurate method:

    a. True
    b. False

18. When conducting patient assessment for the trauma patient with a significant mechanism of injury you should:

    a. Perform a scene size-up and primary assessment
    b. Care for immediate life threats first
    c. Perform a rapid secondary assessment including baseline vital signs
    d. All of the above

19. Every patient assessment begins with _____:

    a. Determining type of BSI needed
    b. Identifying the mechanism of injury
    c. Scene size-up
    d. Identifying resources needed

20. To differentiate between a significant mechanism of injury and nonsignificant; here is an example of a nonsignificant mechanism of injury:

    a. Rollover vehicle crash
    b. A fall of less than 10 feet
    c. Penetrations to the head, neck, chest or abdomen
    d. Ejection from a vehicle

21. Medical identification jewelry can provide important information if the patient is unresponsive and a history cannot be obtained by family or bystanders:

    a. True
    b. False

22. The term “cardiac compromise” is used to describe specific signs and symptoms that indicate some type of emergency relating to the heart. A sign or symptom of a heart attack is:

    a. Diaphoresis (sudden onset of sweating)
    b. Abnormal pulse
    c. Feeling of impending doom
    d. All of the above

23. The medical term for what is commonly known as pain in the chest caused by a lack of sufficient blood and oxygen to the heart muscle is:

    a. Myocordial infraction
    b. Angina Pectoris
    c. Myocardial infarction
    d. Myocardial interference

24. To determine oxygen saturation for patients with the signs and symptoms of cardiac compromise, the American Heart Association recommends the use of a pulse oximeter to monitor peripheral oxygen saturation. Any patient with an oxygen saturation of (SpO2) of less than _____ should receive supplemental oxygen.

    a. 94%
    b. 96%
    c. 98%
    d. 99%

25. Emergency care for a patient with respiratory compromise starts with:

    a. Allowing the patient to remain in a position of comfort
    b. Obtaining baseline vitals
    c. Arranging for ALS response if available
    d. Taking BLS precautions

26. Hyperventilation occurs when the person breathes out and eliminates an excess amount of _____:

    a. Oxygen
    b. Mucus
    c. Carbon dioxide
    d. Carbon monoxide

27. An altered mental status can be caused by _____:

    a. Kidney failure
    b. Psychiatric condition
    c. Infection
    d. All of the above

28. Poisons that are inhaled can reach the circulatory system directly through the _____:

    a. Blood stream
    b. Lungs
    c. Nervous system
    d. None of the above

29. You may encounter water in the airway of a patient who was pulled from a body of water. To treat this patient you should:

    a. Turn the patient on his side and allow excess water to exit the mouth
    b. Place the patient in a supine position and give 2 breaths
    c. Lift the patient's arms above his head so water more easily flows out of the lungs
    d. Gently press on the abdomen to ensure water exits the stomach

30. There are three steps to controlling external bleeding of an extremity. They are;

    a) Direct pressure, the use of a pressure bandage, and the tourniquet
    b) Direct pressure, elevation, pressure point
    c) Direct pressure, elevation, roller bandage
    d) Direct Exposure, the use of a pressure bandage, tourniquet

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ANSWER KEY - Reference tenth Edition of Brady "First Responder"

1. B
2. C
3. A
4. B
5. A
6. D
7. A
8. D
9. B
10. C
11. B
12. D
13. B
14. A
15. A
16. D
17. A
18. D
19. C
20. B
21. A
22. D
23. B
24. A
25. D
26. C
27. D
28. B
29. A
30. A

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Answers and Rationales

1. b) Become immunized from pathogens typically found in EMS. *Vaccines are available for common infectious diseases. Most people receive them as a part of childhood checkups but additional vaccines are available for those with high risk exposure to pathogens. OSHA requires that employees who have a risk of becoming exposed to blood or other potentially infectious material (OPIM) must be offered hepatitis B vaccinations free of charge. EMR 10th, Ch.3, Page 35.*

2. c) Help minimize exposure to a patient's blood and body fluids–*BSI precautions are specific steps to minimize exposure. Examples of BSI are wearing protective gloves, masks, gowns and eyewear. EMR 10th, Ch. 3, Page 36.*

3. a) Oxygen and carbon dioxide– *air enters the lungs through the right and left bronchi. From there air passes though smaller passages called bronchioles when it eventually ends up in the alveoli. It is deep within the alveoli that the exchange of oxygen and carbon dioxide occurs. Good perfusion can be adversely affected by disease if the patient is not able to take in adequate oxygen and eliminate carbon dioxide. EMR 10th, Ch. 4, Page 64.*

4. b) Power lift– *The power lift is used to move a patient from a stretcher or cot; while trying not to bend at the waist any more than you absolutely have to. EMR 10th, Ch. 6, Page 99.*

5. a) True– *The autonomic nervous system controls most involuntary processes. EMR 10th, Ch. 4, Page 71.*

6. d) Oxygen source; *a cylinder. Cylinders come in a variety of sizes, each identified by a specific letter which indicates the liter of oxygen in the cylinder. EMR 10th, Ch. 10 Page 179*

7. a) After each set of 30 compressions, open the airway and check for evidence of a foreign object- *In an unresponsive adult with a FBO, CPR with chest compressions are given and after 30 compressions, checking for an object, and two rescue breaths are given. If the breaths do not go in, the cycle continues; 30 compressions, looking for an object, and two rescue breaths. EMR 10th , Ch. 10, Page 156.*

8. d) All of the above– *Cardiopulmonary resuscitation (CPR) is an emergency procedure that involves the application of both external chest compressions and ventilations to someone in cardiac arrest. EMR 10th , Ch.11, Page 191.*

9. b) An abnormal breathing pattern– *characterized by slow, shallow, gasping breaths that typically occur following cardiac arrest. CPR. EMR 10th , Ch. 11 Page 193.*

10. c) 100 to 120 per minute–*Current AHA Guidelines recommend 100 to 120 compressions per minute; however, without a mask, the rescuer should simply push hard and push fast. EMR 10th Ch.11, Page 195-196.*

11. b) False. *Limiting necessary interruptions to 10 seconds or less is one element that ensures effective CPR. 20 seconds is too long. EMR 10th, Ch. 11, Page 205.*

12. d) In cardiac arrest- *Only patients in cardiac arrest should have an AED placed on them. Ensure the patient is unresponsive, has no carotid pulse and has no normal respirations EMR 10th, Ch. 11 Page 208*

13. b) Last oral intake– *it's important to know when obtaining a history what that patient has taken in, when and approximate quantity. This may alert you to any connection like a food allergy and care for contents of the stomach. EMR 10th, Ch. 12, Page 218-219*

14. a) Rate, depth, sound and ease–. *Each characteristic should be assessed. Rate is classified as normal, rapid or slow. Depth- normal, shallow or deep; Sound- snoring, gurgling, gasping or wheezing; Ease- effortless, labored or difficult. EMR 10th, Ch. 12, Page 223*

15. a) True – *The average pulse rate for an adult is 60 to 100 beats per minute. EMR 10th, Ch. 12, Page 226.*

16. d) Carotid pulse; *The pulse point is in the neck on either side (commonly referred to as the jugular) using two fingers and should be checked on an unresponsive patient. EMR 10th, Ch. 12, Page 227*

17. a) True: *Blood pressure by palpitation is used when the ambient noise makes it difficult to hear with a stethoscope yet feeling the radial pulse is not a very accurate method because it will only provide one reading, an approximate systolic pressure. EMR 10th, Ch. 12,Page 229-230*

18. d) All of the above; *Perform a scene size-up and primary assessment; Care for immediate life threats first; Perform a secondary assessment including vital signs are all elements of the patient assessment for a trauma patient with a significant mechanism of injury. EMR 10th Ch. 13, Page 245*

19. c) Scene size-up– *every patient assessment begins with scene size-up which includes; taking BSI precautions, determining if the scene is safe, identifying MOI, number of patients, additional resources needed and need for spinal precautions. EMR 10th, Ch. 13 Page 246.*

20. b) A fall of less than 10 feet– *a fall of less than 10 feet is considered nonsignificant; however, a fall greater than 15 feet is significant. Ejection, rollover crashes and penetration*

to the head, neck, chest or abdomen are significant mechanisms of injury. EMR 10th, Ch. 13, Page 260

21. a) True – *A MedicAlert bracelet or necklace can provide medical history, including allergies and a phone number for additional information. EMR 10th, Ch. 13, Page 263.*

22. d) All of the above- *signs are objective indications of illness or injury that can be seen, heard, felt, and smelled by another person such as sweating and abnormal pulse. Symptoms are subjective and cannot be observed by another person but are felt and reported by the patient such as the feeling of impending doom. EMR 10th, Ch. 14, Pgs 277*

23. b) Angina Pectoris– *literally translated it means pain in the chest. Though it's similar to a heart attack, the difference is that with angina, the coronary blood flow is not completely cut off. EMR 10th, Ch. 14, Page 278.*

24. a) 94%– *use of a pulse oximeter should be considered a part of obtaining vital signs. SpO2 less than 94% can be supplemented with the use of a nasal cannula. EMR 10th. Ch. 15, Page 283.*

25. d) Taking BLS precautions – *taking BLS precautions is always the first step in emergency care for any patient. EMR 10th, Ch. 15, Page 300.*

26. c) Carbon dioxide–*Hyperventilation is described a rapid, deep and difficult to control. Most cases of hyperventilation are caused by anxiety and are rarely a true emergency. However, it can be a sign of a more serious medical condition. EMR 10th, Ch. 15, Page 296.*

27. d) All of the above– *All of the conditions noted can be the cause of altered mental status, including poisoning or overdose, seizure, stroke, diabetic emergency, hypoxia and trauma EMR 10th, Ch. 16, Page 306-307.*

28. b) Lungs- *Inhaled poisons from fumes, gases, vapors and dust can all enter the circulatory system through the lungs. EMR 10th, Ch. 17, Page 319.*

29. a) Turn the patient on his side and allow excess water to exit the mouth *Once the water runs out, start CPR with 30 compressions to two breaths. Compression starts CPR, not breaths. AHA recommends not attempting to relieve water or air from the stomach unless immediate suction is available. EMR 10th , Ch. 17, Page 347.*

30. a) Direct pressure, the use of a pressure bandage, and the tourniquet – *Elevation can also be used but there is no longer recommendations to have rescuers put pressure on a pressure point. A tourniquet is now used when direct pressure and a pressure bandage fail to stop the bleeding. All three steps are essential for saving a bleeding patient's life. EMR 10th Ch. 18 Page 361*