

300-91W10
Emergency Medical Technician-Basic
Final Written Examination
Answers with Rationale (August 2001)

1. d. keep the weight of the patient as close to your body as possible

Rules of body mechanics state that when lifting or carrying heavy objects, you must ensure that your center of gravity is maintained as close to the center of your body as possible and that your body is maintained in normal anatomical alignment at all times. When performing a two person or four person carry, this is best accomplished by keeping the weight you are carrying as close to your body as possible.

2. b. locked in a natural curved-in position

The lumbar region should always be locked into a natural inward curve position when lifting a patient from the ground. The safest method to lift a patient or object from the ground is to assure that the torso is kept in normal upright alignment. The spine has a normal outward curve in the thoracic area and normal inward curve in the lumbar region.

3. a. wash the equipment with soap and water

It is very important to remove any visible blood and body fluids from the equipment with soap and water prior to final disinfection.

4. b. evaluate the patient's safety

The number one priority when approaching an emergency scene is to ensure your own safety and that of your crew. The next priority is to evaluate and ensure the safety of the patient. These steps are all components of the scene size-up and should be accomplished prior to entering the scene or performing any steps in the patient assessment. Prior to gaining access to the patient, you must evaluate and assure that your actions upon entering the car will not endanger the patient.

5. c. a competent patient may withdraw from medical care at any time

When determining a patient's right to refuse care, you must first determine if the patient is mentally alert and competent to make an informed decision. Any patient that meets this criteria has the right to refuse treatment. If you are unsure of the patient's ability to make an informed decision, you should err in favor of patient care.

6. d. ensure that your hepatitis vaccinations are current

The most common method of transmission of hepatitis to healthcare providers is through accidental needle stick or contamination of fresh scratches/abrasions/cuts with the patient's infected blood or bodily fluid. The Center for Disease Control recommends vaccination for healthcare providers, such as EMS personnel, who are frequently exposed to blood and other body fluids. Body substance isolation precautions and washing your hands after each patient contact are essential for preventing contamination of self and the patient.

7. c. open the airway with a modified jaw thrust

After determining unresponsiveness of a patient, you must next establish an open airway. An appropriate method to open the airway of an unresponsive trauma patient is the modified jaw thrust maneuver.

8. a. 17-year-old male complaining of pain in his lower leg after falling 8 feet from a tree

A rapid trauma assessment is indicated for all individuals who are found unresponsive or in cases where the mechanism of injury suggests a high potential for life-threatening injuries. A fall of less than 20 feet, with a chief complaint of extremity pain does not typically indicate a significant mechanism of injury and would require a focused examination after the initial assessment.

9. b. administer supplemental oxygen

The initial management of a patient with “crushing chest pain” and signs of hypoperfusion (clammy skin) is to administer high concentration oxygen. The recommended assisted administration of nitroglycerin requires a chief complaint of chest pain and a blood pressure greater than 100 systolic. Application of the AED is not indicated in a patient who is breathing and has a pulse.

10. d. look at the chest to evaluate adequate rise and fall

The initial determination of respiratory status is best accomplished by evaluating the tidal volume. Which is determined by observing for adequate rise and fall of the chest. Immediately following the scene size-up, forming a general impression and opening an airway, you should assess a patient’s respiratory status by looking for rise and fall of the chest and determining the rate of respirations. Peripheral cyanosis may be an indicator of hypoxia but is not the best method to determine respiratory status since peripheral skin color may be affected by other external factors such as excessive cold temperatures.

11. c. managing the airway and placing him in the recovery position

The initial care of a patient with an altered mental status and signs of potential airway compromise includes airway management and positioning to avoid injury. The use of the recovery position for a responsive, vomiting patient is recommended for protecting the airway of the patient. Attempting to determine the cause of the altered mental status does not affect the initial management of the patient.

12. d. determine his level of consciousness

After completing the scene size-up, the initial step when approaching any patient is to determine if the patient is responsive or unresponsive.

13. d. mechanism of injury

A rapid trauma assessment is used to quickly identify and treat those injuries that present an immediate threat to the patient’s life or limb. The decision to perform a rapid trauma assessment is made early while determining the general impression and the determination of the mechanism of injury. Any mechanism of injury that leads to a high index of suspicion of serious trauma indicates the need for a rapid trauma assessment.

14. c. always ask open-ended questions

The best way to establish the nature of a patient’s illness is to ask open-ended questions that require more than a yes/no answer. A question such as “Why did you call for an ambulance today” is a good example of an open-ended question that is helpful in determining the patient’s nature of illness.

15. b. be observant of the scene before you get out of the ambulance

The best method to determine the safety of any scene is by carefully observing the scene for any dangers before leaving the response vehicle. Dispatch may provide you with information that will increase your suspicions of danger, however, you should never leave the response vehicle before performing a global search of the scene to identify dangers to self, crew, bystanders, or the patient.

16. a. follow medical direction

All medication administration by the EMT-Basic requires prior authorization by physician medical direction. This authorization may be provided on-line or off-line. In cases such as anaphylaxis, chest pain, or respiratory difficulty, medication is administered following a focused history and physical exam. Remember, the AED is not attached to patient's who are not in cardiac arrest.

17. b. ask the patient if he has a prescribed inhaler

As a component of assessing a patient with respiratory distress, you should determine if the patient has been prescribed an inhaler. The inhaler may be useful in managing the respiratory distress. Many patients experiencing acute respiratory distress will not receive a detailed physical exam.

18. c. evaluate whether or not the patient can swallow

Oral glucose is administered to a patient who is a known diabetic and is experiencing altered mental status. To help prevent aspiration of the glucose, you must ensure that the patient is alert enough to swallow the medication.

19. b. when there are more patients that the EMT can effectively manage

A mass casualty plan should be initiated immediately when you determine that your resources are insufficient to manage the number of patients at the scene.

20. a. performing abdominal thrusts to relieve gastric distention

The use of a pocket mask on an unresponsive patient requires opening the airway while ensuring cervical spine immobilization precautions, assuring an adequate mask seal and providing supplemental oxygen. If severe gastric distention is interfering with ventilation, the patient should be rolled onto his side and you should apply gentle pressure with the palm of your hand over the patient's epigastrium to relieve the distention. Abdominal thrusts are only indicated when there is a foreign body airway obstruction, not gastric distention.

21. b. dyspnea

Dyspnea refers to painful or difficult breathing. Apnea refers to the absence of spontaneous breathing. Hypoxia refers to reduced oxygen in the cells. Anoxia refers to a general lack of oxygen.

22. d. just above the umbilicus

The recommended hand position for performing abdominal thrusts is to place your hands slightly above the umbilicus and well below the xiphoid process.

23. d. perform a finger sweep of her mouth

The recommended sequence for the care of an unresponsive adult patient with an obstructed airway who becomes unconscious is to lower the patient to the floor and perform a finger sweep prior to attempting to ventilate the patient. The loss of muscle tone due to unconsciousness may have allowed the obstruction to become dislodged, thus making it easy to remove with a finger sweep.

24. a. seal the wound with an occlusive dressing and assist ventilations

The prehospital care of a patient with an open chest wound includes sealing the wound with an occlusive dressing to temporarily seal the chest wall. Respiratory rates greater than 24 per minute with reduced volume (shallow) require you to assist ventilations.

25. b. ask the patient if he/she is choking

The first step in managing a responsive patient with an obstructed airway is to determine if immediate intervention is necessary. First ask the patient if he/she is choking. If he/she can answer you or if he/she is coughing forcefully, then the obstruction is only partial and your immediate intervention is observation. If he/she cannot answer or appears to be cyanotic, you should immediately intervene by performing abdominal thrusts.

26. c. trigger the demand valve until the chest rises adequately

To determine the length of the inspiratory time when using a flow-restricted, oxygen powered ventilation device (demand valve), you should watch for the chest wall to rise. Once the chest wall rises, you should release the trigger and allow for passive exhalation. Removing or disabling the pressure relief valve could cause serious injury to the patient.

27. d. jaw thrust

In any situation where the patient is unresponsive or the mechanism of injury leads to a high index of suspicion for spinal injury, all airway maneuvers should be completed without movement of the cervical spine. An appropriate airway maneuver for the unresponsive trauma patient is the modified jaw thrust maneuver.

28. c. 12-15 L/min.

The recommended oxygen flow rate when using a non-rebreather mask is 12-15 liters per minute. Flow rate less than 10 liters per minute are generally not sufficient to keep the reservoir bag inflated, thus causing a reduction in the oxygen concentration actually delivered to the patient.

29. a. rapidly, while delivering the inspiratory volume over 2 seconds

The American Heart Association recommends maintaining artificial inspiratory ventilation times for a period of 2 seconds. This slow inspiratory time along with consistent inspiratory pressure allows for more complete filling of the lungs while preventing the occurrence of gastric distention generally associated with rapid, forceful ventilations.

30. d. a 16-year-old male with tingling around the lips and a respiratory rate of 20

The normal adult respiratory rate is 12-20 breaths per minute. Assessment findings indicating adequate breathing include regular, bilateral rise and fall of the chest, warm, pink skin, and age appropriate rate. Normal newborns breathe at an average rate of 40-60 breaths per minute.

31. b. make sure your hands are in the proper position on initial thrusts

In order to provide the most effective abdominal thrust without injuring the patient, you must assure your hands are properly positioned slightly above the navel and well below the xiphoid process. The thrust should be directed quickly upward, toward the head, in the midline and should not be directed to either side of the abdomen.

32. a. hold his breath for as long as he comfortably can

After inhaling the medication, the patient should hold his breath as long as possible. In order for the inhaled medication to be absorbed and have the maximum affect on the patient, it must remain in the lungs as long as possible.

33. c. apply 100% oxygen with a non-rebreather mask

Increasing oxygenation in a patient who is experiencing labored breathing is the treatment of choice and assisted ventilation may also be necessary. Wheezing indicates a narrowing of the lower airways. Attempting to visualize a foreign body in a partial airway obstruction is not recommended.

34. b. critical

The severity of a burn is determined by the amount of body surface involved, the location, the depth and potential for airway/ventilatory compromise. Partial thickness burns covering more than 30% of the body are considered critical. Large burns of the chest and back create a potential for respiratory compromise.

35. a. abrasion

An abrasion is an injury characterized by the outermost layer of skin being damaged by a rubbing or scraping force. This injury is usually very painful even though the damage is superficial.

36. c. 19-year-old male who had a horse fall on him; pelvis is unstable and painful; vital signs are BP 80/systolic, P 140 and weak, R 26

The 1994 EMT-Basic National Standard Curriculum states the application and inflation of the pneumatic anti-shock garment is clearly indicated for pelvic instability with clinical signs of hypoperfusion. Local protocols may provide additional indications.

37. b. cover the organs with a moist, sterile dressing

Abdominal organs that are protruding through the abdominal wall must be kept moist to prevent tissue death. Replacing any organ in the abdomen is contraindicated.

38. d. rapidly transport the patient to an appropriate medical facility

Severe internal bleeding is a life-threatening injury requiring surgical intervention. Your management of this condition should be rapid transportation to a medical facility capable of providing surgery.

39. c. when the patient is fully secured to a long spine board

When applying a spinal immobilization device, the head of the patient must be maintained manually in the neutral in-line position until the patient is completely secured to the immobilization device. Releasing manual stabilization of the head at any time prior to this increases the risk of compromising the integrity of the cervical spine.

40. a. the nature of pain and the patient's blood pressure

The indication for you to administer nitroglycerin in the pre-hospital setting is a non-trauma patient who exhibits signs and symptoms of chest pain and has a systolic blood pressure greater than 100 mmHg.

41. a. analyze the rhythm

The proper sequence for using the AED is to attach the device to the patient, stop CPR, clear the patient, analyze the rhythm and deliver the first shock if the machine advises. Following the shock, you should immediately push the button to re-analyze the rhythm and deliver a second shock if the machine advises. A set of three stacked shocks should be administered before continuing CPR, ventilating the patient or assessing for the presence of a spontaneous pulse as long as the cardiac rhythm remains unchanged.

42. b. ensure that you repeat the BP to the physician and ask if nitroglycerin is still appropriate

The indications for the use of nitroglycerin include a systolic blood pressure greater than 100 mmHg. In this case you should repeat the blood pressure and ask the physician if h/she still wants the nitroglycerin to be administered.

43. a. carotid artery

The American Heart Association (AHA) recommends assessing the carotid pulse in all unresponsive patients greater than one year of age. For patients less than one year of age, the AHA recommends assessing the brachial pulse.

44. b. apply oxygen to the patient

The initial management of a patient who has a prescription for nitroglycerin and complains of chest pain is to administer high concentration oxygen. The indications for the administration of nitroglycerin require a blood pressure greater than 100 mmHg systolic. The AED is not indicated in patients who are breathing and have a pulse.

45. c. verify that the patient is pulseless and apneic

The AED should only be attached to pulseless and apneic patients. You must first verify the presence or absence of a pulse before continuing with the components of the chain of survival.

46. a. an ALS team assumes care of the patient

Once you begin care of a patient, it can not be stopped unless someone who can provide an equal or higher level of care assumes responsibility for patient care. The mere presence of a physician on the scene does not indicate that care will be continued by the physician. If care is not continued at an equal or higher level, then you risk being accused of abandoning the patient.

47. d. attach the AED and request ALS back-up if available

The components of the chain of survival include early access, early CPR, early defibrillation, and early ALS care.

48. b. error on the part of the rescuer

Current research indicates that the majority of inappropriate shocks delivered by the AED are due to human error, such as attaching the device to a patient with a pulse or analyzing rhythms in a moving ambulance.

49. c. ensure your own safety as well as that of your partners

Swift water rescue requires special training and equipment. Your first responsibility is to provide for safety of self, crew and bystanders.

50. a. protect the patient from injury and be prepared to suction and ventilate the patient when the seizure stops

You should attempt to protect the child from injury during the seizure activity. Immediately following the seizure, you should be prepared for excessive oral drainage, vomiting and respiratory distress. You should never attempt to physically or mechanically restrain a patient who is experiencing seizures.

51. b. administer activated charcoal

An indication for the administration of activated charcoal is signs of ingested poisons. The action of activated charcoal, which is to bind with poison and inhibit absorption by the body, is much more effective than diluting the poison.

52. b. bronchodilation

Anaphylaxis results in the acute bronchial swelling and constriction of the airways. Epinephrine is a powerful medication that dilates the bronchioles and constricts blood vessels. A side effect of epinephrine is an increased heart rate.

53. c. inserting an oropharyngeal or nasopharyngeal airway

A snoring noise heard in an unresponsive patient during inspiration indicates a partial upper airway obstruction. The immediate management of this situation includes placement of an airway adjunct and assessment of the adequacy of ventilation.

54. d. body substance isolation, removing smoldering clothes from the patient, securing and monitoring the airway and transporting rapidly

The principles of burn management, regardless of the severity, include taking body substance isolation precautions, stopping the burning process by removing smoldering clothes, continuously monitoring the airway and ventilatory status and rapidly transporting the patient for definitive care. Because of a high potential for infection, blisters at the burn site should not be broken.

55. a. hot, dry skin

The most critical assessment finding relative to a heat related emergency is hot, dry skin. This finding indicates that the heat-regulating mechanism of the body has failed. This is a true emergency that will result in death if not managed immediately.

56. b. carefully handling and transporting the patient

All unresponsive, hypothermic patients need to be transported to a definitive care facility. Current literature suggests gentle handling decreases the likelihood of initiating ventricular fibrillation in the hypothermic patient. You should begin passive rewarming of the patient that is unresponsive due to profound hypothermia by using warm blankets and heating the patient compartment of the ambulance.

57. d. large body size and strength

You should be aware of the high potential for violence in patients who exhibit a threatening posture, quick irregular movements and a rising tone of voice. You should not equate a patient's large size or strength as an indication of potential for violence.

58. c. in the skin, respiratory or cardiovascular systems

Allergic reactions occur following contact with an allergen in the form of itching, hives, watery eyes, bronchial constriction and vasodilation. Allergic reactions do not occur spontaneously. An allergen must have come in contact with the patient either through ingestion, inhalation, injection or absorption.

59. a. jaundice

Signs and symptoms of ingested poisons include unusual odors on the patient's breath, nausea, vomiting and altered mental status. Jaundice is a yellowish color of the skin that indicating a disease of the liver.

60. c. 20 breaths per minute

The recommended rescue breathing rate for an infant is 20 times per minute or one breath every three seconds. Rescue breathing rates less than 20 times per minute will not provide for adequate oxygenation.

61. b. facial cyanosis and a respiratory rate of 70

The signs and symptoms of respiratory failure in infants include respiratory rates greater than 60, cyanosis, decreased muscle tone, severe use of accessory muscles and altered mental status. Early respiratory distress is characterized by stridor, wheezing, intercostal retractions and nasal flaring.

62. c. reposition the infant's head and re-attempt to ventilate

If your initial attempt at ventilating an unconscious infant is unsuccessful, your next step would be to reposition the infant's head to assure a patent airway and then re-attempt ventilation. Initiating back blows or chest thrusts should only be attempted after determining that a foreign body airway obstruction exists.

63. a. crowning with contractions

Crowning is the presence of the baby's head at the vaginal opening with each contraction and indicates that delivery is imminent.

64. d. observing for a return of color after squeezing the infant's hands

Capillary refill in an infant is most easily assessed by pressing on the nailbeds, hand or foot and watching for return of normal color within 2 seconds.

65. b. lying on her back with her knees bent and spread apart

The recommended positioning of the mother for delivery of a newborn is supine with her legs spread apart.

66. a. the volume that will cause the chest to rise

The best method for determining the appropriate volume of artificial ventilation is to provide breaths that cause the chest to rise. For the infant, small puffs of air from the mouth of the rescuer are usually sufficient to cause the chest to rise.

67. c. the history reported is inconsistent with the injuries that are found

You should be suspicious of possible child abuse if your assessment findings are not consistent with the history provided by the parents or the child.

68. a. applying supplemental oxygen and ventilating if needed

Pediatric patients experiencing respiratory distress require supplemental oxygen administration. You should always assess the adequacy of ventilation and assist ventilations if necessary. There is no indication that this particular child is not ventilating adequately. Ventilation alone without supplemental oxygen is ineffective.

69. d. protocols or standing orders

Standing orders/protocols are written documents containing patient care procedures to follow when managing specific patient presentations. Standing orders/protocols usually include the name of the condition, associated signs and symptoms as well as prescribed action that you are to take in managing the patient. Standing orders/protocols are a form of off-line medical direction.

70. b. When speaking to a four-year-old child: "Hi, my name is David. I am an EMT and I would like to look at your cut."

Principles of proper communication during an emergency call include introducing yourself, explaining everything that you are doing in easily understood language and being non-judgmental. You should not reinforce delusions of the patient, but should answer all questions honestly.

71. c. it is a legal record of the EMT's assessment and treatment of the patient

The patient care report is a legal document completed by the rescuer that lists the assessment findings and care rendered to the patient. The document can be changed by drawing a line through the entry and writing your initials and the date next to the changed entry.

72. a. at the scene, the patient acted drunk

A patient care report should include your objective observations, assessment findings and direct quotes made by the patient, family members or bystanders. Statements reflecting your opinion such as "acted drunk at the scene" are inappropriate and should not be included.

73. c. allows the receiving facility to adequately prepare for the patient's arrival

Providing the receiving hospital with an accurate radio report of your assessment findings and interventions allows the hospital personnel to prepare the necessary equipment to continue the care of the patient. The hospital staff may still need to triage based on their current patient load and the severity of the patient's illness or injury.

74. b. be honest with the patient when asked a question

Ensuring honesty and integrity in both written and spoken communications is a professional attribute of the EMT and is essential in all patient encounters. It will establish rapport between you and the patient and the patient's confidence in your abilities to provide safe and effective care will be enhanced. You should address a patient in a respectful manner using his/her last name and the title of "Mr." Or "Mrs." as appropriate. Using direct eye contact with the patient helps express honesty and may help calm the patient.

75. a. the nature of the call and its location

The most important information to gain from dispatch prior to arrival at the scene is the exact location of the emergency and the impression of the dispatcher as to what is wrong with the patient.

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