

Chapter 6

1. What structure is at the back of the nasal cavity?
 - A) larynx
 - B) oropharynx
 - C) nasopharynx
 - D) laryngopharynx

2. What structure is located at the back of the mouth?
 - A) larynx
 - B) oropharynx
 - C) nasopharynx
 - D) laryngopharynx

3. The opening to the trachea is guarded by a leaf-shaped structure called the:
 - A) bronchus.
 - B) epiglottis.
 - C) cricoid cartilage.
 - D) thyroid cartilage.

4. Which of the following structures is NOT found in the upper airway?
 - A) pharynx
 - B) epiglottis
 - C) trachea
 - D) nasopharynx

5. Which of the following structures is NOT found in the lower airway?
 - A) alveoli
 - B) bronchi
 - C) trachea
 - D) epiglottis

6. What type of muscle is the diaphragm?
 - A) tensed
 - B) relaxed
 - C) skeletal
 - D) smooth

7. The contraction of the diaphragm and intercostal muscles is called:
- A) atelectasis.
 - B) exhalation.
 - C) inhalation.
 - D) paradoxical movement.
8. Inhalation occurs when the:
- A) ribs move inward.
 - B) ribs move downward.
 - C) diaphragm moves upward.
 - D) diaphragm moves downward.
9. Exhalation occurs when the:
- A) diaphragm contracts.
 - B) thorax increases in size.
 - C) ribs move upward and outward.
 - D) diaphragm relaxes.
10. How many breaths per minute are considered adequate breathing for an adult?
- A) 6 to 12
 - B) 8 to 12
 - C) 12 to 20
 - D) 16 to 24
11. How many breaths per minute are considered adequate breathing for a child?
- A) 10 to 20
 - B) 12 to 24
 - C) 15 to 30
 - D) 24 to 40
12. How many breaths per minute are considered adequate breathing for an infant?
- A) 12 to 20
 - B) 15 to 30
 - C) 20 to 30
 - D) 25 to 50

13. Inadequate breathing in an adult exists when the rate is less than:
- A) 8 or more than 24 breaths/min.
 - B) 10 or more than 30 breaths/min.
 - C) 12 or more than 35 breaths/min.
 - D) 12 or more than 40 breaths/min.
14. You are assessing a patient's need for supplemental oxygen. You know that room air contains approximately what percentage of oxygen?
- A) 16%
 - B) 21%
 - C) 28%
 - D) 78%
15. Which of the following statements about the exchange of oxygen and carbon dioxide is true?
- A) The arterioles remove carbon dioxide before the blood reaches the capillaries.
 - B) Waste products and carbon dioxide enter the lungs through the pulmonary vein.
 - C) Carbon dioxide is passed from the alveoli to the blood through the pulmonary capillaries.
 - D) Oxygen exchange takes place at the pulmonary capillaries and at each living cell.
16. The diaphragm acts like an involuntary muscle when we:
- A) sleep.
 - B) cough.
 - C) take a deep breath.
 - D) hold our breath.
17. In a healthy individual, what gas exchange in arterial blood most rapidly stimulates an increase in the respiratory rate?
- A) a rise in the level of oxygen
 - B) a fall in the level of oxygen
 - C) a rise in the level of carbon dioxide
 - D) a fall in the level of carbon dioxide
18. During expiration, the pressure inside the lungs will:
- A) be greater than air outside the body.
 - B) cause the alveoli to open.
 - C) force the diaphragm down.
 - D) increase the chest diameter.

19. If the brain is deprived of oxygen, cells in the brain may die within how many minutes?
- A) 1 minute
 - B) 4 to 6 minutes
 - C) 6 to 10 minutes
 - D) 10 to 15 minutes
20. Living cells begin to die when they are deprived of:
- A) water.
 - B) oxygen.
 - C) sunlight.
 - D) carbon dioxide.
21. What airway begins at the nose and ends at the larynx?
- A) upper
 - B) lower
 - C) anterior
 - D) posterior
22. What structure contracts and relaxes as we breathe?
- A) trachea
 - B) alveolus
 - C) diaphragm
 - D) bronchioles
23. The normal stimulus to breathe is the level of:
- A) oxygen in the blood.
 - B) oxygen in the brain.
 - C) carbon dioxide in the blood.
 - D) carbon dioxide in the brain.
24. Which of the following is a sign of adequate ventilation?
- A) Skin color does not improve with oxygen.
 - B) The chest does not rise and fall with each ventilation.
 - C) You hear and feel air escape as the patient exhales.
 - D) The patient's stomach is rising and falling.

25. Which of the following methods is used to open the airway in a non-trauma patient?
- A) head tilt–neck lift
 - B) head tilt–chin lift
 - C) simple hyperextension
 - D) hyperextension–jaw thrust
26. Which of the following methods is used to open the airway in a patient with a possible spinal cord injury?
- A) jaw thrust
 - B) jaw thrust–neck lift
 - C) jaw thrust–head tilt
 - D) head tilt–chin lift
27. Suctioning of the oral cavity in an adult patient should be accomplished within how many seconds?
- A) 5
 - B) 10
 - C) 15
 - D) 20
28. Which of the following steps should NOT be taken while oral suctioning a patient?
- A) suction for less than 15 seconds
 - B) suction while entering a patient's mouth
 - C) suction while exiting a patient's mouth
 - D) turn the patient's head to the side if the possibility of injury does not exist
29. When suctioning a patient more than once over a period of time, you should:
- A) use shorter suctioning times.
 - B) sweep the mouth with your fingers.
 - C) rotate between rigid and soft catheters.
 - D) rinse the catheter and tubing with water.
30. How many seconds should your breaths last when you use mouth-to-mask breathing to ventilate a patient?
- A) 1
 - B) 2
 - C) 3
 - D) 4

31. During mouth-to-mouth ventilations, what percentage of oxygen is being provided?
- A) 12%
 - B) 16%
 - C) 20%
 - D) 24%
32. You are performing mouth-to-mask ventilations with high-flow oxygen connected and running at a flow rate of 15 L/min. What percentage of oxygen does your patient receive?
- A) 35%
 - B) 45%
 - C) 55%
 - D) 65%
33. Mouth-to-mask ventilation devices should always be used with:
- A) oxygen.
 - B) oropharyngeal airways.
 - C) nasopharyngeal airways.
 - D) a one-way valve attachment.
34. Which of the following statements about the use of bag-valve-mask devices is FALSE?
- A) They are difficult for one rescuer to use.
 - B) They are available in pediatric and adult sizes.
 - C) They provide more oxygen than mouth-to-mask systems.
 - D) They provide more volume than mouth-to-mask systems.
35. A bag-valve-mask device is most effective when it:
- A) has a pop-off valve.
 - B) is self-cleaning.
 - C) is connected to oxygen.
 - D) is operated by one person.
36. Which of the following devices is NOT part of a bag-valve-mask system?
- A) clear facemask
 - B) self-inflating bag
 - C) oxygen reservoir
 - D) three-way stopcock valve

37. What is the most common problem you may encounter when using a bag-valve-mask device?
- A) environmental conditions
 - B) maintaining an airtight seal
 - C) positioning the patient's head
 - D) volume of the bag-valve-mask device
38. When using the one-person bag-valve-mask technique, you should maintain a seal using the:
- A) C-clamp technique.
 - B) jaw-thrust technique.
 - C) double-hand technique.
 - D) head-tilt/chin-lift maneuver.
39. When ventilating a patient with a bag-valve-mask device, you should:
- A) listen for gurgling.
 - B) look for inflation of the cheeks.
 - C) look for rise and fall of the chest.
 - D) look for signs of the patient breathing on his or her own.
40. Which of the following statements about an oxygen-powered ventilation device is FALSE?
- A) It has a trigger arm attached.
 - B) It can be used in adults as well as children.
 - C) It provides 100% oxygen at 40 L/min.
 - D) It has a pressure-relief valve that opens at 60 cm of water.
41. You are ventilating a patient with a stoma, and air is escaping from the mouth and nose. To prevent this, you should:
- A) use less pressure.
 - B) suction the stoma.
 - C) suction the breathing tube.
 - D) seal the mouth and pinch the nostrils.
42. What is the most common cause of airway obstruction in an unconscious patient?
- A) vomitus
 - B) the tongue
 - C) blood clots
 - D) aspirated food

43. If you discover that a patient has had a laryngectomy, you should:
- A) use a small mask to make a seal over the stoma.
 - B) use the jaw-thrust maneuver to open the airway.
 - C) expect the opening to be to the side of midline in the upper neck.
 - D) realize that the patient is extremely susceptible to gastric distention.
44. The recovery position for an unconscious patient without a spinal injury reduces the chance for:
- A) shock.
 - B) snoring.
 - C) drooling.
 - D) vomiting and aspiration.
45. How should an unresponsive patient without traumatic injuries be positioned to maintain spontaneous breathing?
- A) supine
 - B) face down
 - C) in the recovery position
 - D) in a position of comfort
46. You should NOT use an oral airway in:
- A) infants and children.
 - B) cardiac arrest patients.
 - C) patients with a gag reflex.
 - D) patients with a suspected neck injury.
47. To select the proper size of nasal airway, you should measure:
- A) only the diameter of the nostril.
 - B) from the tip of the nose to the chin.
 - C) from the tip of the nose to the earlobe.
 - D) from the tip of the nose to the corner of the mouth.
48. A full tank of oxygen contains how many pounds per square inch (psi)?
- A) 1,000
 - B) 2,000
 - C) 3,000
 - D) varies with different sizes of tanks

49. Up to what percentage of oxygen is delivered by a nonrebreathing facemask?
- A) 100%
 - B) 90%
 - C) 80%
 - D) 70%
50. What percentage of oxygen is delivered by a nasal cannula with a flow rate of 6 L/min?
- A) 24%
 - B) 30%
 - C) 40%
 - D) 55%
51. Nasal airways should be used with caution in head injury patients because they can:
- A) fracture the septum.
 - B) penetrate the cranium.
 - C) damage the turbinates.
 - D) cause uncontrolled bleeding.
52. A nonrebreathing facemask is adjusted to:
- A) flow at 6 to 10 L/min.
 - B) flow at 10 to 15 L/min.
 - C) the air temperature.
 - D) the amount of air the patient inhales.
53. What is the size of the oxygen cylinder most commonly used in the field?
- A) size A
 - B) size D
 - C) size E
 - D) size M
54. A safe residual amount in an oxygen cylinder is:
- A) 500 psi.
 - B) 2,000 psi.
 - C) 500 L.
 - D) 2,000 L.

55. A nasal airway is inserted:
- A) without lubrication.
 - B) only in the right nostril.
 - C) anteriorly and rotated 180°.
 - D) posteriorly in the larger nostril.
56. Which of the following types of oxygen flowmeters should be used on portable tanks in the prehospital setting?
- A) demand regulator
 - B) nonrebreathing regulator
 - C) Bourdon-gauge flowmeter
 - D) pressure-compensated flowmeter
57. You arrive at the scene of an electrocution and find an unconscious man who has shallow respirations. To maintain his airway, you should:
- A) insert an oropharyngeal airway by placing it upside down in the mouth, and rotating it 180°.
 - B) lubricate the tip of an oropharyngeal airway before inserting it.
 - C) insert an oropharyngeal airway until the flange rests inside the teeth.
 - D) hyperextend the neck, insert an oropharyngeal airway, and deliver breaths with positive pressure.
58. Which of the following statements about the use of a nasopharyngeal airway is true?
- A) It should be used in the left nostril only.
 - B) It should be coated with a water-soluble lubricant prior to insertion.
 - C) It is more likely to induce vomiting than an oropharyngeal airway.
 - D) It should be removed immediately and replaced with an oropharyngeal airway if you encounter an obstruction.
59. When size D oxygen cylinders are full, they usually have about how many pounds per square inch (psi) of oxygen?
- A) 900
 - B) 1,500
 - C) 2,000
 - D) 3,000
60. To select the proper size oropharyngeal airway, measure the distance between the:
- A) chin and nostril.
 - B) chin and earlobe.
 - C) nose and earlobe.
 - D) corner of the mouth and earlobe.

61. An unstable, traumatized patient is breathing at a rate of 15 breaths/min. To deliver up to 90% inspired oxygen, you should use a:
- A) nasal cannula.
 - B) Venturi mask.
 - C) simple facemask.
 - D) nonrebreathing facemask.
62. Oxygen is a medical gas. What color tank is it stored in?
- A) blue
 - B) gray
 - C) green
 - D) yellow
63. To determine the proper size of an oral airway to use on a child, you should measure from the:
- A) corner of the mouth to the earlobe.
 - B) tip of the thumb to the palm of the hand.
 - C) tip of the nose to the corner of the mouth.
 - D) top of the first finger to the top of the little finger.
64. The passive process in which molecules of oxygen move from an area of high concentration to an area of low concentration is known as:
- A) active movement.
 - B) oxygen pumping.
 - C) diffusion.
 - D) gaseous transport.
65. Which of the following conditions is NOT likely to produce hypoxia?
- A) pulmonary edema
 - B) high blood glucose level
 - C) substantial blood loss
 - D) an asthma attack
66. Hypoxia is defined as:
- A) decreased oxygen in body tissues.
 - B) increased oxygen saturations.
 - C) reduced ventilations.
 - D) oxygen and carbon dioxide mismatch.

67. The breathing pattern with increasing rate and depth of respirations followed by periods of no breathing is known as:
- A) apnea.
 - B) agonal respirations.
 - C) Cheyne-Stokes breathing.
 - D) Biot's respirations.
68. The most effective measure used to prevent the attachment of an oxygen regulator to a nitrous cylinder is:
- A) color coding the regulators.
 - B) providing warning labels on the cylinders.
 - C) reading manufacturers guidelines prior to use.
 - D) regulator and cylinder pin indexing.
69. Pulse oximetry measures:
- A) the oxygen saturation of hemoglobin.
 - B) ventilatory rates.
 - C) carbon dioxide levels in the blood.
 - D) oxygen levels in the body tissues.
70. A pulse oximeter is placed on the digit of a person with delayed capillary refill time. The effect on the oxygen saturation levels would be:
- A) higher than normal.
 - B) lower than normal.
 - C) indeterminate.
 - D) accurate.
71. When ventilating an adult with a BVM device attached to oxygen, the volume (mL) delivered with each breath should be:
- A) 400–600.
 - B) 700–1,000.
 - C) 1,200–1,600.
 - D) 1,800–2,400.
72. When ventilating an adult with a BVM device without oxygen, the volume (in mL/kg) delivered with each breath should be approximately:
- A) 7.
 - B) 10.
 - C) 15.
 - D) 18.

73. Gastric distention may be prevented by:
- A) ventilating quickly, one second per breath.
 - B) slow and complete emptying of the BVM device and reservoir.
 - C) using the Sellick maneuver.
 - D) stacking ventilations one after the other.
74. The most common complication of using a flow-restricted oxygen powered ventilation device is:
- A) rapid ventilation rates.
 - B) gastric distention.
 - C) drying of the respiratory system.
 - D) nasal bleeding.
75. Treatment of an adult with a partial airway obstruction with good air exchange is:
- A) back blows and chest thrusts.
 - B) a series of abdominal thrusts.
 - C) manual removal with your finger.
 - D) close monitoring and supportive care.

Answer Key

1. C
2. B
3. B
4. C
5. D
6. C
7. C
8. D
9. D
10. C
11. C
12. D
13. A
14. B
15. D
16. A
17. C
18. A
19. B
20. B
21. A
22. C
23. C
24. C
25. B
26. A
27. C
28. B
29. D
30. B
31. B
32. C
33. D
34. D
35. C
36. D
37. B
38. A
39. C
40. B
41. D
42. B
43. A
44. D

- 45. C
- 46. C
- 47. C
- 48. B
- 49. B
- 50. C
- 51. B
- 52. B
- 53. B
- 54. A
- 55. D
- 56. C
- 57. A
- 58. B
- 59. C
- 60. D
- 61. D
- 62. C
- 63. A
- 64. C
- 65. B
- 66. A
- 67. C
- 68. D
- 69. A
- 70. C
- 71. A
- 72. B
- 73. C
- 74. B
- 75. D