

## SAMPLE BASIC EXAMINATION QUESTIONS

1. Coughing that occurs during awake intubation is prevented by local anesthetic block of which of the following nerves?
  - A. Superior laryngeal and glossopharyngeal
  - B. Superior laryngeal and hypoglossal
  - C. Recurrent laryngeal and glossopharyngeal
  - D. Recurrent laryngeal and superior laryngeal

Answer Key: D

Content Outline Code: 1B3c2

2. What is the **MOST** likely explanation for the initial reduction in core temperature during general anesthesia?
  - A. Ablation of thermoregulatory vasoconstriction
  - B. Conductive heat loss
  - C. Evaporative heat loss in the respiratory tract
  - D. Redistribution of heat from the core to the periphery

Answer Key: D

Content Outline Code: 1B3c2

3. Which of the following is characteristic of the pharmacokinetics of alfentanil?
  - A. Clearance is greater than that of fentanyl
  - B. Protein binding is minimal
  - C. The majority of alfentanil in plasma is ionized
  - D. Volume of distribution is smaller than that of fentanyl

Answer Key: D

Content Outline Code: 1A4c1b1

4. A 65-kg, 70-year-old man in the PACU is breathing spontaneously at 20/min through an endotracheal tube connected to a T-piece with a fresh gas flow of 5 L/min and an  $\text{FiO}_2$  of 0.5. His tidal volume is 350 mL. Over one hour, his  $\text{SpO}_2$  decreases from 98% to 84%, and then improves to 92% when  $\text{FiO}_2$  is increased to 1.0. Which of the following is the **MOST** likely cause of his hypoxemia?
  - A. Decreased functional residual capacity
  - B. Increased dead space ventilation
  - C. Inhibition of hypoxic pulmonary vasoconstriction
  - D. Room air admixture during inspiration

Answer Key: A

Content Outline Code: 1C3b

5. A patient has an axillary block for surgery of the forearm. Intraoperatively, he has pain in the lateral aspect of the forearm and responds by flexing his elbow. Which of the following nerves is **MOST** likely to be inadequately blocked?
  - A. Intercostobrachial
  - B. Musculocutaneous
  - C. Radial
  - D. Ulnar

Answer Key: B

Content Outline Code: 1A1c1c

6. A 40-year-old man who is scheduled for repair of a tendon laceration of the left hand has complete anesthesia in the median, radial, and ulnar nerve distributions after supraclavicular block. Two hours of tourniquet inflation are required for completion of the procedure. The **MOST** appropriate **NEXT** step is an additional block of which of the following nerves?
- A. Axillary
  - B. Intercostobrachial
  - C. Lateral antebrachial cutaneous
  - D. Musculocutaneous

Answer Key: B

Content Outline Code: 1A1c1c

7. Redistribution from the brain to which of the following sites is **PRIMARILY** responsible for emergence after a single dose of propofol?
- A. Fat
  - B. Liver
  - C. Lung
  - D. Skeletal muscle

Answer Key: D

Content Outline Code: 1A4c3b

8. An anesthesia machine is set to deliver oxygen 2 L/min, nitrous oxide 2 L/min, and sevoflurane. After 30 minutes of stable anesthesia, which of the following is the **MOST** likely cause of a **DECREASE** in the oxygen analyzer reading from 50% to 30%?
- A. A leak in the ventilator bellows
  - B. Accumulation of water on the oxygen sensor membrane
  - C. Disconnection of the wall oxygen hose
  - D. Presence of the oxygen analyzer in the expiratory limb

Answer Key: B

Content Outline Code: 1A2g6

9. An induction dose of ketamine is **MOST** likely to have which of the following effects?
- A. Analgesia
  - B. Attenuation of respiratory response to carbon dioxide
  - C. Decreased cerebral metabolic rate
  - D. Preservation of laryngeal reflexes

Answer Key: A

Content Outline Code: 1A6h

10. As compared to an intravenous dose of morphine, what is the **MOST** likely explanation for the **DECREASED** duration of action of an intravenous dose of fentanyl?
- A. It has a greater lipid solubility
  - B. It has increased hepatic metabolism
  - C. It has less protein binding
  - D. It has a shorter elimination half-life

Answer Key: A

Content Outline Code: 1Ac1b1

11. The standard error of the mean (SE) describes which of the following?
- A. The precision of the population mean
  - B. The range of the sample values
  - C. The limits of the 95% confidence interval
  - D. The deviation about the median of the study group

Answer Key: A

Content Outline Code: 1A3B

12. Pulse oximetry accurately reflects SaO<sub>2</sub> in which of the following situations?
- A. Administration of indocyanine green
  - B. Carboxyhemoglobinemia
  - C. 40% Fetal hemoglobin concentration
  - D. Methemoglobinemia

Answer Key: C

Content Outline Code: A2h5

13. An otherwise healthy patient with a fasting blood glucose of 100 mg/dL is receiving a four-hour general anesthetic for repair of tendon lacerations. What is his expected blood glucose concentration on emergence?
- A. Marked hypoglycemia
  - B. Mild hypoglycemia
  - C. Mild hyperglycemia
  - D. Marked hyperglycemia

Answer Key: C

Content Outline Code: 1C7B1c

14. Which of the following drugs **INCREASES** gastric pH while **DECREASING** gastric volume?
- A. Glycopyrrolate
  - B. Magnesium trisilicate
  - C. Metoclopramide
  - D. Ranitidine

Answer Key: D

Content Outline Code: 1B1d6a

15. Which of the following conditions is **NOT** associated with upregulation of the postjunctional acetylcholine receptors at the neuromuscular junction?
- A. Burn injuries
  - B. Myasthenia gravis
  - C. Prolonged bed rest
  - D. Prolonged use of neuromuscular blocking agents

Answer Key: B

Content Outline Code: 1C8G2

16. What characteristic of nitrous oxide **MOST** likely explains why its alveolar and inspired concentrations equilibrate more rapidly than those of desflurane?
- A. Higher vapor pressure
  - B. Lower blood gas solubility
  - C. Creation of a second gas effect
  - D. Delivery at a higher inspired concentration

Answer Key: D

Content Outline Code: 1A4b11

17. What is the **PRIMARY purpose** of denitrogenation prior to anesthetic induction?
- A. Improving matching of ventilation and perfusion
  - B. Increasing contribution of second gas effect to rate of induction
  - C. Increasing oxygen reserve in the functional residual capacity
  - D. Maximizing arterial oxygen content

Answer Key: C

Content Outline Code: 1C2a1b

18. A 32-year-old woman sustains an injury to the left recurrent laryngeal nerve during thyroidectomy. Which of the following is the **MOST** likely postoperative finding?
- A. Adduction of the left vocal cord at rest
  - B. Aphonia
  - C. Aspiration caused by glottic incompetency
  - D. Impaired coughing

Answer Key: A

Content Outline Code: 1C2b3a

19. What is the **MOST** likely reason that desflurane is delivered using a vaporizer that contains internal heaters?
- A. Heat decreases the drug's viscosity
  - B. Desflurane does not vaporize adequately at room temperature
  - C. Heat increases the drug's oil: gas partition coefficient
  - D. Heat prevents fluctuations of vapor pressure

Answer Key: D

Content Outline Code: 1A2e1

20. An otherwise healthy 70-year-old man receives 12 units of packed red blood cells for persistent diffuse bleeding during a suprapubic prostatectomy. Hemoglobin concentration is 11 g/dL; platelet count is 55,000/mm<sup>3</sup>; plasma fibrinogen concentration is 180 mg/dL; prothrombin time is 14 sec; and partial thromboplastin time is 35 sec. The **MOST** appropriate therapy is administration of which of the following?
- A. Cryoprecipitate
  - B. Desmopressin (DDAVP)
  - C. Epsilon-aminocaproic acid
  - D. Platelets

Answer Key: D

Content Outline Code: 1C6b1

21. What is the expected mixed venous oxygen tension, in mmHg, in a normal adult after breathing 100% oxygen for 10 minutes?
- A. 573
  - B. 150
  - C. 95
  - D. 45

Answer Key: D

Content Outline Code: 1C3a7d

22. Which of the following drugs has the **SHORTEST** elimination half-life?
- A. Flumazenil
  - B. Diazepam
  - C. Lorazepam
  - D. Midazolam

Answer Key: A

Content Outline Code: 1A4c5i