

Select EACH choice that appropriately answers the question.

1. Which of the following are tests used in a malpractice action to determine proximate cause?

- A. the reasonable prudence test
- B. the substantial factor test
- C. the 'but for' test
- D. the contribution of negligence test

2. Which of the following sets of examples represent a nominal scale?

- A. Patient gender: male, female
- B. Severity rank: mild, moderate, severe
- C. Cause of death: cardiac arrest, trauma, neoplasm
- D. Blood type: A, B, AB, O

3. Which of the following are identified as possible complications from pulmonary artery catheterization via the subclavian approach?

- A. Thoracic duct perforation
- B. Pneumothorax
- C. Tricuspid valve injury
- D. Vagus nerve injury

4. The lumbar plexus is enclosed by which of the following muscles?

- A. Psoas Major
- B. Tensor fascia lata
- C. Sartorius
- D. Quadratus lumborum

5. Which of the following statements concerning blood containing citrate-phosphate-dextrose-adenine (CPDA) are correct?

- A. The hematocrit of CPDA blood is about 70-75%
- B. The shelf-life of CPDA blood is about two weeks
- C. The citrate in CPDA blood helps prevent coagulation
- D. CPDA blood contains no plasma

Answers and Rationales

1. B,C. In a malpractice case, the court must determine whether or not a breach of duty by the defendant was the proximate cause of the injury. If the court finds that the odds are better than not that a breach of duty by the defendant resulted in injury to the plaintiff, then this requirement is met. Two tests are usually used in determining proximate cause: the 'but for' test and the substantial factor test. If the injury would not have occurred *but for* the actions or negligence on the part of the anesthetist or if the actions or negligence of the anesthetist constituted a substantial factor in the injury, then proximate cause is established.

Barash PG, Cullen BF, Stoelting RK. Clinical Anesthesia. 5th ed. Philadelphia, PA: Lippincott Williams and Wilkins; 2006: 100.

2. A,C,D. A nominal scale is one in which the different categories are qualitative rather than quantitative. Each selection in a nominal scale is descriptive and indicates that it is different from the other selections, but no inference can be made that one is greater or lesser in value than another. The severity rank is an ordinal scale in which the selections are often associated with a relative quantity such as age, degrees (such as degree of satisfaction), or order of importance, but the values cannot be used in direct computation. For example, if the values of severity are provided as 1: Mild, 2: Moderate, and 3: Severe, it is apparent that 3 represents a higher degree of severity than 1 (mild), but does not imply that it is three times as severe.

Polgar S, Thomas SA. Introduction to Research in the Health Sciences. 5th ed. Edinburgh: Churchill-Livingstone; 2008: 130-131.

3. B,C. Common complications from pulmonary artery catheterization (and central venous catheterization) regardless of route of insertion include infection, hematoma, air embolism, thrombosis, and shearing and embolization of the catheter. Complications from the subclavian approach include pneumothorax, hemothorax, and hydrothorax. Vagus nerve injury is a complication of the internal jugular approach, as is carotid artery puncture, and thoracic duct injury (if the insertion site is on the left side). General complications from the use of a pulmonary artery catheter include tricuspid valve injury, arrhythmias, thromboembolism, pulmonary infarction, perforation of pulmonary artery or right atrium, hemoptysis, balloon rupture, and endocardial thrombi.

Yao FF. Anesthesiology: Problem-Oriented Patient Management. 6th ed. Philadelphia: Lippincott, Williams, and Wilkins; 2008: 147.

4. A,D. The lumbar plexus is enclosed by the fascia of three muscles: psoas major, iliacus, and quadratus lumborum.

Nagelhout JJ, Zaglaniczny KL. Nurse Anesthesia. 3rd ed. Philadelphia, PA: WB Saunders Company; 2005: 1022.

5. A,C. Processing and storage of collected whole blood includes introducing additives at the point of collection and sometimes after the separation into the blood components. Citrate, phosphate, adenine, sodium chloride, and sugar or sugar alcohols are the most common ingredients of the additive solutions. Citrate, typically present as citric acid or sodium citrate inhibits coagulation by chelating calcium present in the blood. Phosphate, usually sodium phosphate, and adenine help maintain high levels of adenosine triphosphate (ATP) which is depleted during storage. The hematocrit of CPDA blood is about 70-75%. The shelf-life of CPDA blood is about 35 days. CPDA blood contains about 50-70 mL of plasma per 250 mL of total volume.

Barash PG, Cullen BF, Stoelting RK. Clinical Anesthesia. 5th ed. Philadelphia, PA: Lippincott Williams and Wilkins; 2006: 219.