**Chapter 1 Introduction to Sterile Products**

**1) In Canada, facilities that participate in sterile compounding follow guidelines provided by USP Chapter <797>, NAPRA and this professional association:**

A) CPTEA

B) CSHP

C) FDA

D) CAPT

Answer: B

Page Reference: 4

Learning Outcome: 1.1

**2) During the late 18th and early 19th century, important advances in aseptic technique practices were developed as well as this breakthrough administration technique.**

A) Injection into a large muscle

B) Injection directly into a vein

C) Injection into the subcutaneous tissue

D) Injection into the cardiac muscle

Answer: C

Page reference: 3

Learning Outcome: 1.1

**3) What is the term for a specialized piece of equipment introduced in the late 1960’s and used in sterile compounding facilities today that provides a particle and bacteria free environment when preparing sterile products.**

A) Autoclaving

B) Laminar Airflow Hood

C) Dry Heat Sterilizer

D) Sanitation and Contamination control device

Answer: B

Page reference: 5

Learning Outcome: 1.1

**4)Sterile products are generally referred to as:**

A) pyrogens

B) injectables

C) infusions

d) parenterals

Answer: D

Page reference: 7

Learning Outcome: 1.2, 1.3

**5) Which of the following terms is associated with the probability of a preparation not being sterile after it has been exposed to a sterilization process?**

A) Optimal Sterilization level

B) Sterility Assurance level

C) Pyrogen Load level

D) Particulate Matter level

Answer: B

Page reference: 14

Learning outcome: 1.3

**6) Sterile products have the same tonicity as what bodily fluid?**

A) Blood

B) Lacrimal fluid - tears

C) Urine

D) Saliva

Answer: A

Page reference: 16

Learning outcome 1.3

**7) Which of the following statements would accurately describe Particulate Matter?**

A) Can only be introduced during the manipulation process of compounding a sterile product

B) It is a micro-organism that is visible to the naked eye

C) It could cause blood vessel blockage in the brain and lungs

D) It can be removed from a compounded sterile product by heat sterilization

Answer: C

Page reference: 14

Learning Outcome 1.3

**8) A solution with a lower concentration of dissolved substances than that of red blood cells is defined as:**

A) Isotonic

B) Hypotonic

C) Hypertonic

D) Endotonic

Answer: B

Page reference: 17

Learning Outcome: 1.4

**9) Which of the following ingredients would be considered a common antimicrobial preservative?**

A) Benzyl Alcohol

B) Benzoyl Peroxide

C) Chlorpropamide

D) Chlorpheniramine

Answer: A

Page reference: 17

Learning Outcome: 1.4

**10) The term “coring” when related to the rubber stopper of a medication vial is a result of:**

A) the vial accidentally being dropped on the floor

B) poor manufacturer’s quality control during production

C) poor quality materials resulting in the breakdown of the rubber stopper

D) improper technique when inserting a needle into the rubber stopper

Answer: D

Page reference: 19

Learning Outcome: 1.5

**11) Non-Aqueous vehicles are recommended to be injected by which of the following administration routes?**

A) Intradermal

B) Subcutaneous

C) Intravenous

D) Intramuscular

Answer: D

Page reference: 16

Learning Outcome: 1.4

**12) The most common tonicity agent used to adjust tonicity of a sterile preparation is:**

A) Potassium Chloride

B) Sodium Chloride

C) Calcium Chloride

D) Magnesium Chloride

Answer: B

Page Reference: 16, 18

Learning Outcome: 1.3

**13) Which of the following is a technique used to dissolve sterile solid dosage forms?**

A) Trituration

B) Levigation

C) Reconstitution

D) Dissolution

Answer: C

Page Reference: 8

Learning Outcome: 1.2

**14) “Potential for increased drug wastage” is a disadvantage of this type of sterile product container:**

A) Prefilled syringe

B) Ampoule

C) Vial

D) Cartridge

Answer: B

Page Reference: 20

Learning Outcome: 1.5

**15) Which of the following containers has a “luer lock opening” which allows the attachment of a luer-lock syringe to the opening?**

A) Glass ampoule

B) Double chamber vial

C) Plastic IV bag

D) Plastic ampoule (polyamp)

Answer: D

Page reference: 20

Learning Outcome: 1.5

**16) To maintain the pH of a preparation, phosphate, citrate and acetate could be added to the solution. These are commonly referred to as:**

A) Buffers

B) Tonicity agents

C) Emulsifiers

D) Chelating agents

Answer; A

Page reference: 17

Learning Outcome: 1.4

**17) Which of the following statements regarding Osmotic pressure is most accurate:**

A) The less particles, the lower the osmotic pressure

B) The more particles, the higher the osmotic pressure

C) The more particles, the lower the osmotic pressure

D) The number of particles does not determine the osmotic pressure

Answer: B

Page reference: 16-17

Learning Outcome: 1.4

**18) A substance released from the cell wall of gram negative bacteria that could cause serious adverse effects and possibly death if introduced into a sterile product, is called:**

A) Microbe

B) Funghi

C) Virus

D) Endotoxin

Answer: D

Page reference: 13

Learning Outcome: 1.3

**19) This parenteral vehicle has been purified by either distillation and/or reverse osmosis, has no preservative and has been sterilized.**

A) Bacteriostatic water

B) Sterile water for injection

C) Distilled water

D) Water for irrigation

Answer: B

Page reference: 15

Learning outcome: 1.4

**20) Plastic containers such as polyamps and IV solution bags are commonly made of PVC or PEC material. What does the acronym PVC stand for?**

A) Poly Vascular Container

B) Plastic Vinyl Container

C) Polyvinyl Chloride

D) Polyethylene Vinyl Chloride

Answer: C

Page reference: 20

Learning outcome: 1.5