Clinical Laboratory Chemistry 2nd edition Sunheimer Test Bank

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Clinical Laboratory Chemistry, 2e **(Sunheimer)**
Chapter 1 Laboratory Basics

1) Ion-exchange filters remove which of the following from a water source?
A) Ions to reduce the mineral content of water
B) Lead
C) Organic solvents.
D) Bacteria
Answer: A

2) Activated carbon filters remove:
A) Ions from water.
B) Organic compounds from water.
C) Acids and bases from water.
D) Large particulates from water.
Answer: B

3) A 0.22-micron filter will remove:
A) Particles with a diameter of 0.01 microns.
B) Particles with a diameter of 0.01 nanometers.
C) Particles with a diameter of 2.2 microns.
D) Only sodium chloride crystals.
Answer: C

4) The unit of resistivity is:
A) Amperes.
B) Volts.
C) Coulombs.
D) MΩ · cm.
Answer: D

5) Microbiological impurities in source water are reported in which format?
A) Colony forming units per mL (Cfu/mL)
B) Total organic carbon (TOC) in ng/g
C) milligrams of SiO_2
D) Resistivity.
Answer: A

6) According to CLSI, the resistivity of clinical laboratory reagent water (CLRW) must be:
A) > 100 milliamps.
B) < 10 millivolts.
C) > 10 MΩ · cm.
D) < 10 MΩ · cm.
Answer: C

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7) Which of the following should not be storied in borosilicate glass because it will etch the inside surface of the glass container?
A) Saline
B) Strong bases (caustics)
C) Clinical laboratory reagent water
D) Weak acids
Answer: B

8) Low actinic glassware has which of the following properties?
A) High thermal resistance with no color added to the glass
B) Low thermal resistance with a green-yellow color added as an integral part of the glass
C) High thermal resistance with a blue color added as an integral part of the glass
D) High thermal resistance with an amber or red color added as an integral part of the glass
Answer: D

9) Care must be taken before selecting polyethylene plastic for use as test tubes and disposable transfer pipets because:
A) Polyethylene can bind or absorb proteins, dyes, stains, and picric acid.
B) Polyethylene does not bind or absorb proteins, dyes, stains, and picric acid.
C) Polyethylene cannot be used to pipet serum.
D) Polyethylene forms insoluble salts in the presence of sodium chloride.
Answer: A

10) Which of the following classes of glassware, including pipets, is manufactured and calibrated to deliver the most accurate volume of liquid?
A) A
B) B
C) AA
D) C
Answer: A

11) A *to deliver* or *TD pipet* is designed to:
A) Allow the user to remove a portion of the sample in the tip for better accuracy.
B) Be vigorously tapped against the test tube after all the liquid is removed.
C) Drain by gravity.
D) Be refilled or rinsed out with the appropriate solvent after the initial liquid has been drained from the pipet.
Answer: C

12) Which of the following devices is used to calibrate laboratory thermometers?
A) Barometer
B) Gallium melting point cell
C) Titanium freezing point cell
D) Platinum cathode voltmeter
Answer: B

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13) Convert 75 mg/dL to mg/L.
A) 7.5 mg/L
B) 75.0 mg/L
C) 750 mg/L
D) 7500 mg/L
Answer: C

14) Convert 70.0 mg/dL glucose to mmol/L glucose.
A) 3.89 mmol/L
B) 38.9 mmol/L
C) 70.0 mmol/L
D) 389 mmol/L
Answer: A

15) If a thermometer reads 39°F, what is the equivalent degree Celsius (°C)?
A) 0.39°C
B) 3.9°C
C) 39°C
D) 40°C
Answer: B

16) Convert 200 picograms to grams.
A) 2.0×10^{-10} grams
B) 2.0×10^{-8} grams
C) 20.0 grams
D) 200 grams
Answer: A

17) A patient's calcium result is 8.0 mg/dL. Convert this result to mmol/L.
A) 0.004 mmol/L
B) 0.20 mmol/L
C) 2.0 mmol/L
D) 20.0 mmol/L
Answer: C

18) The surface area of a laboratory bench measures 12 square feet. What is the surface area in square meters?
A) 1.115 square meters
B) 11.15 square meters
C) 111.5 square meters
D) 1115 square meters
Answer: A

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19) What is the weight in kilograms for a 24-hours stool specimen that weighs 0.50 pounds ?
A) 0.0226 kilograms
B) 0.2265 kilograms
C) 2.265 kilograms
D) 22.65 kilograms
Answer: B

20) How much serum is required to make a 1 to 4 dilution with a total volume of 100.0 µL ?
A) 0.025 µL
B) 0.25 µL
C) 2.5 µL
D) 25 µL
Answer: D

21) A patient's creatinine is outside the linear range of the analyzer; 10 µL of serum is added to 90.0 µL of diluent and the diluted sample is reanalyzed. The creatinine value of the diluted sample is 1.0 mg/dL. Which of the following creatinine values is correct?
A) 1.0 mg/dL
B) 10.0 mg/dL
C) 20.0 mg/dL
D) 100 mg/dL
Answer: B

22) What is the dilution factor if 10 mL of sample is added to 190 mL of diluent?
A) 10
B) 19
C) 20
D) 25
Answer: C

23) A serum creatine kinase is diluted 1/200 with a result of 50 U/L. What is the patients' actual creatine kinase result?
A) 50 U/L
B) 200 U/L
C) 1000 U/L
D) 10,000 U/L
Answer: D

24) How many grams of sodium hydroxide (NaOH) are required to prepare 250 mL of a 1.00 molar (M) solution?
A) 2.5 g
B) 10.0 g
C) 25.0 g
D) 100 g
Answer: B

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25) What is the normality (N) of a 1.5 molar (M) H_2SO_4 solution?
A) 1.0 N
B) 1.5 N
C) 3.0 N
D) 36 N
Answer: C

26) What is the molality (M) of a solution that contains 330 g of $CaCl_2$ per kilogram?
A) 3.0 M
B) 3.3 M
C) 33.0 M
D) Unable to determine
Answer: A

27) What is the concentration in mg/dL of a 140 mEq/L sodium standard?
A) 0.323 mg/dL
B) 3.23 mg/dL
C) 32.3 mg/dL
D) 322 mg/dL
Answer: D

28) Convert 145 mEq/L sodium concentration to mmol Na^+/L.
A) 14.5 mmol Na^+/L
B) 145 mmol Na^+/L
C) 167 mmol Na^+/L
D) 333 mmol Na^+/L
Answer: B

29) What is the molarity of a 20.0% w/v glucose solution?
A) 0.111 molar
B) 1.11 molar
C) 2.22 molar
D) 11.1 molar
Answer: B

30) Determine the molarity (M) of a solution if 125 mL of a 3.5 molar (M) solution is diluted to a final volume of 500 mL.
A) 0.875 M
B) 3.50 M
C) 8.75 M
D) 10.0 M
Answer: A

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31) Convert 40°C to °F.
A) 60°F
B) 90°F
C) 100°F
D) 104°F
Answer: D

32) What is the concentration (g/dL) of a 1/10 dilution of a 12% NaCl solution?
A) 0.12
B) 1.20
C) 12.0
D) 120.0
Answer: B

33) A solution contains 45g/100 mL of glucose. It is diluted 1/10 and diluted a second time 1/10. What is the concentration in g/100 mL of the final solution?
A) 45.0 g/100mL
B) 4.50 g/100 mL
C) 0.45 g/100mL
D) 0.045 g/100mL
Answer: B

34) How many milliliters (mL) of a 2.0M solution are required to prepare 50 mL of a 0.3M solution?
A) 0.075 ml
B) 0.75 ml
C) 7.5 ml
D) 75.0 ml
Answer: C

35) A barium chloride solution is prepared by transferring 20 g of barium chloride to 1.0 liters of water. Calculate the chloride concentration in milliequivalents per liter of this solution.
A) 1.92 mEq Cl/L
B) 19.2 mEq Cl/L
C) 192.0 mEq Cl/L
D) 384 mEq Cl/L
Answer: C

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