CCEMTP
Self Assessment Test #1

***This tool has been designed to encourage studying, verifying and being able to identify correct vs incorrect. Students should verify all answers with the student resource materials available from UMBC and other references. Discuss any questions with the individual instructors if you need clarification/further info.**

1. The first use of helicopters for air medical transport occurred as a result of:
   a. The development of organ donor programs
   b. The Korean conflict of 1950
   c. The Prussian Siege of Paris
   d. Enhanced responsibilities of State Law enforcement personnel

2. The preferred qualifications of a Critical Care Professional include:
   a. Successful completion of PHTLS/BTLS
   b. A minimum of 3 years experience in an ALS system
   c. Enrollment in a CCEMTP course
   d. A minimum of 3 years as an EMS supervisor

3. Which of the following is not considered routine equipment on-board a Critical Care Transport unit?
   a. IV infusion pumps
   b. Portable ABG machine
   c. Neonatal isolette
   d. Central venous line kit

4. Which of the following trauma patients is a candidate for Critical Care Transport?
   a. 40 year old who has fallen from a height greater than 10 feet
   b. 16 year old with partial and full thickness burns of the arms, affecting 15% body surface area
   c. 33 year old with a Revised Trauma Score of 12
   d. 22 year old who has been ejected from a vehicle

5. The law requiring that patients are provided written information on the right to make medical decisions is the:
   a. Patient Self Determination Act
   b. Federal Advance Directives Act
   c. Living Will Statute
   d. Treatment Refusal Act

6. Which of the following areas are often cited in litigation g?
   a. Failure to adequately monitor the patient's condition
   b. Failure to adequately document findings
   c. Failure to advise more highly trained individuals of abnormalities
   d. All of the above

7. A common problem of specimen collection associated with the breakdown of red blood cells and subsequent release of hemoglobin is known as:
   a. Hemoglobinuria
   b. Hematocrit
   c. Hemolysis
   d. Hemodialysis

8. Which of the following **IS NOT** seen with a normal or increased hematocrit and hemoglobin?
   a. Dehydration
   b. COPD
   c. Anemia
   d. Severe diarrhea

9. A 16 year old female presents with the following signs and symptoms; nervousness, anxiety, dizziness, with numbness and tingling of the extremities. The patient's ABG analysis shows the following values, based on these values, what condition would you suspect?
   pH = 7.50
   PO2 = 100
   PCO2 = 30
   HCO3 = 24
   BE = -1

   a. Respiratory acidosis
   b. Respiratory alkalosis
   c. Metabolic acidosis
   d. Metabolic alkalosis

10. The primary intracellular cation important for repolarization of cardiac cells is:
   a. Sodium
   b. Potassium
   c. Calcium
   d. Magnesium

11. The urine output of an average adult should be:
   a. 10-30 cc/ hr
   b. 20-50 cc/ hr
   c. 30-70 cc/ hr
   d. 40-90 cc/ hr

12. A _____ test is used to identify an organism, while a _____ test is used to determine the best antibiotic to use against the organism.
   a. Sensitivity; Guaiac
   b. Prothrombin; culture
   c. Thromboplastin; staining
   d. Culture; sensitivity

13. Which of the following is **CORRECT** with regard to shock?
   a. A degenerative condition leading to death
   b. A physiologic state of tachycardia and diaphoresis
   c. General systemic response to inadequate tissue perfusion
   d. Irreversible hypotension

14. Which of the following will occur as a result of Neurogenic shock?
   a. Peripheral vasoconstriction
   b. Peripheral vasodilation
   c. The absence of sympathetic cardiac stimulation
   d. B and C

15. A 31 year old female is experiencing anaphylaxis. What is the **CORRECT** medication given to promote vasoconstriction, bronchodilation, and inhibit further release of biochemical mediators?
    a. Decadron
    b. Epinephrine
    c. Solumedrol
    d. Benadryl

16. Gram negative and gram positive bacteria have been implicated as the causative factors of:
    a. Sepsis
    b. Disseminated Intravascular Coagulation
    c. Multisystem organ failure
    d. Pancreatitis

17. Which of the following abnormal lab values are indicative of DIC?
    a. Serum glucose level
    b. Clotting tests
    c. Liver function tests
    d. Renal function tests

18. Which of the following statements is **CORRECT** with regard to the proper infection control measures while caring for a tuberculosis patient?
    a. The use of gloves only
    b. The use of gloves and goggles
    c. Use of a micron filter face mask
    d. Washing your hands after touching the patient

19. In which of the following would the blood oxygen saturation be high, yet the patient still dies from hypoxia?
    a. Carbon monoxide poisoning
    b. Hypovolemia
    c. Hypothermia
    d. All of the above

20. The normal $PaC0_2$ for a healthy adult, breathing room air is:
    a. 60-80
    b. 30-40
    c. 35-45
    d. 7.35-7.45

21. Which of the following is **CORRECT** regarding the $Fi0_2$ of room air?
    a. 80-100 torr
    b. 21%
    c. 100%
    d. 49 torr

22. Which of the following is **CORRECT** in regard to changing a patient's oxygen delivery system prior to obtaining an ABG sample?
    a. Should not be done
    b. Can be done if noted on the sample
    c. May require 15 minutes for the patient to adapt
    d. Requires the sample be tested on two machines, and results compared

23. After pleural decompression, assessment observations would include:
    I. Hemoptysis
    II. Signs of hypoxemia
    III. Lung sounds
    IV. Tracheal stenosis

    a. I, II, III
    b. II, III, IV
    c. I, III, IV
    d. I, II, IV

24. The volume of gas inhaled or exhaled during a single respiratory cycle is called the:
    a. Inspiration capacity
    b. Vital capacity
    c. Total lung capacity
    d. Tidal volume

25. Which of the following **is** a complication of pleural decompression?
    a. Pneumothorax
    b. Infection
    c. Lung contusion
    d. Occlusion of the 14 gauge catheter

26. The chest tube insertion site for air removal is the:
    a. Seventh intercostal space on the mid axillary line
    b. Second intercostal space on the mid axillary line
    c. Second intercostal space on the mid clavicular line
    d. Fifth or sixth intercostal space on the mid clavicular line

27. Which of the following is/are **TRUE** with regard to the indications for clamping a chest tube?
    a. To locate the source of an air leak
    b. Replacing the drainage unit
    c. Suspicion that the tube has been accidently dislodged
    d. All of the above

28. A dyspneic patient complains of sharp chest pain in the upper right chest. It becomes worse on deep inspiration. Which condition would you suspect?
    a. Acute bronchospasm
    b. Pleuritic irritation
    c. Acute myocardial infarction
    d. Bronchial obstruction

29. Choose the blood gas sequence that indicates the need for mechanical ventilation.
    a. Decreasing PO2, decreasing PCO2, normal pH
    b. Increasing PO2, decreasing PCO2, increasing pH
    c. Decreasing PO2, increasing PCO2, decreasing pH
    d. Increasing PO2, decreasing PCO2, decreasing pH

30. Which of the following **IS NOT** a standard ventilator setting?
    a. Peak inspiratory pressure less than 40 lpm
    b. Flow rate 80-100 lpm
    c. Tidal volume 7-10 ml/kg body weight
    d. Respiratory rate 10-14 breaths per minute

31. Which of the following **IS NOT** an indication for ETT suctioning?
    a. The normal cough mechanism is lost
    b. Production of secretions increase
    c. To maintain patency of the device
    d. Monitor tube position

32. Which of the following abnormalities can be corrected by increased ventilation?
    a. Metabolic acidosis
    b. Respiratory acidosis
    c. Metabolic alkalosis
    d. Respiratory alkalosis

33. Which statement is **FALSE** regarding the use of Sellick's maneuver?
    a. Pressure is applied over the cricoid cartilage
    b. It cannot be used on children
    c. It serves to partially occlude the esophagus in the vomiting patient
    d. Aids for possible improved visualization of the airway structures for intubation

34. Place the following steps for rapid sequence intubation in chronological order:
    I. Apply a cardiac monitor and pulse oximeter
    II. Pre-oxygenate the patient
    III. Medicate the patient with neuromuscular blocking agent
    IV. Medicate the patient with a sedative agent if necessary
    V. Intubate the patient

    a. IV, II, I, V, III, VI
    b. III, I, II, IV, V, VI
    c. II, I, V, III, IV, VI
    d. I, II, III, IV, V

35. Which of the following is **CORRECT** regarding why a tracheostomy wound is not packed or surgically closed?
    a. To allow rapid removal of the tube if necessary
    b. To avoid subcutaneous emphysema
    c. To avoid the possibility of infection
    d. The neck tape adequately secures the tube; no other stability is needed

36. Which of the following is the **CORRECT** procedure for a crichothyrotomy incision?
    a. A transverse incision is made through the superficial cricothyroid membrane
    b. A transverse incision is made 1 cm superior to the suprasternal notch
    c. A transverse incision is made between the fourth and fifth ribs
    d. The subcutaneous tissues are infiltrated with lidocaine prior to starting the incision

37. Which of the following **IS NOT** an indication for needle cricothyrotomy:
    a. Obstruction below the cricothyroid membrane
    b. Manual measures for airway maintenance have failed
    c. Endotracheal intubation does not relieve obstruction
    d. Endotracheal intubation is not possible

38. When the anterior neck is palpated from superior to inferior, the cricothyroid membrane is:
    a. The first prominent structure palpated
    b. The second prominent structure felt
    c. Between the first and second prominent structures
    d. Below the second prominent structure

39. Which procedure allows rapid entrance into the airway by making a horizontal incision?
    a. Percutaneous transtracheal jet insufflation
    b. Needle cricothyrotomy
    c. Surgical cricothyrotomy
    d. Retrograde surgical intubation

40. A stabbing incision is made at the _____ to perform a surgical cricothyrotomy:
    a. Thyroid membrane
    b. Thyroid cartilage
    c. Cricothyroid membrane
    d. Cricoid cartilage

41. Which of the following is **CORRECT** regarding an indication for retrograde intubation?
    a. Inability to fully open the patient's mouth
    b. A patient less than 5 years old
    c. Lack of a laryngoscope
    d. The presence of subcutaneous emphysema

42. Which of the following are potential side effects or complications of retrograde intubation?
    I. Bleeding
    II. Hypoxemia
    III. Coagulation disorder
    IV. The lack of a local anesthetic for the puncture site

    a. I, IV
    b. II, III
    c. III, IV
    d. I, II

43. Which of the following is **FALSE** regarding invasive line complications?
    a. Sluggish infusion is often associated with catheter kinks
    b. If unable to withdraw blood, flush with 20 ml of normal saline
    c. Infection of the exit site requires dressing changes every 2 days
    d. You can avoid catheter damage by keeping the catheter looped on the chest wall

44. Which of the following is **CORRECT** regarding CVP monitoring?
    a. Allows accurate assessment of left ventricular function
    b. Allows rapid assessment of left ventricular end diastolic pressure (LVEDP)
    c. CVP fluctuates with right ventricular compliance
    d. Accurately measures PCWP

45. PCWP stands for:
    a. The pulmonary capillary wedge pressure
    b. The right atrial afterload
    c. The left atrial pressure
    d. The pulmonary artery diastolic pressure

46. Which of the following is **CORRECT** regarding the difference between a spontaneously wedged catheter, as opposed to one that is occluded:
    a. Aspirate for blood return
    b. Inflate the balloon
    c. Excessive catheter lengths are more prone to occlusion
    d. Reconfirm proper transducer placement at the phlebostatic axis

47. Why is it best to place the alarm in the "pulse" mode rather than the "heart rate" mode?
    a. It would detect bleeding from loose tubing
    b. The heart rate is picked up off of the blood pressure waveform, making it more accurate
    c. It would detect air in the system
    d. It would detect an improperly wedged

48. A disease that would increase the afterload of the heart would result in a/an:
    a. Increase in the cardiac index
    b. Decrease in the stroke volume
    c. Increase in myocardial contractility
    d. Decrease in arterial pressure

49. What would the effect of positive pressure ventilation be on hemodynamic waveforms?
    a. There would be no effects
    b. The same as those associated with spontaneous respirations
    c. Hemodynamic pressure waves rise during positive pressure ventilation
    d. Transducer calibration would need to reflect higher pulmonary pressures

50. Which of the following is **FALSE** regarding the Rh factor?
    a. It is an antigenic substance
    b. It is present in the blood plasma
    c. Rh positive blood administered to an Rh negative patient will result in hemolysis
    d. Rh positive blood administered to an Rh negative patient will result in anemia

51. Which blood preparation contains the formed elements, clotting factors and antibodies?
    a. Whole blood
    b. Packed red blood cells
    c. Fresh frozen plasma
    d. Albumin

52. Which of the following test results would be the most helpful in assessing a patient with a bleeding disorder?
    a. Red blood cell count
    b. Platelet count
    c. Hematocrit
    d. Differential count

53. Which of the following statements is **CORRECT** with regard to decreasing the danger of transfusion reactions?
    a. Administering a fluid bolus of normal saline
    b. Adding normal saline to the transfusion
    c. Monitoring the urine output
    d. Slowly infusing blood during the first 15 minutes

54. Which of the following actions would be carried out **INITIALLY** if a patient experienced a transfusion reaction?
    a. Notify medical control
    b. Administer high flow oxygen
    c. Discontinue the transfusion
    d. Raise the patient's head and monitor vital signs

55. Which of the following is **CORRECT** in regard to diastole?
    a. The tricuspid and mitral valves are closed; the aortic and pulmonic valves are open
    b. It is a phase of the cardiac cycle when the myocardium contracts
    c. It is a phase that is approximately twice as long as systole
    d. None of the above is true

56. The term inotropic refers to the:
    a. Heart rate
    b. Contractile force
    c. Automaticity
    d. None of the above

57. A twelve lead ECG is obtained by placing _____ electrodes on the body:
    a. 6
    b. 8
    c. 10
    d. 12

58. Which of the following is **FALSE** regarding the components of the electrocardiogram?
    a. Intervals are measured in fractions of seconds
    b. Waveforms captured on ECG paper have three primary characteristics: amplitude, duration, and configuration
    c. The first half of the P wave reflects right atrial depolarization
    d. The absolute refractory period is represented by the second half of the T wave

59. Which of the following is/are **CORRECT** with regard to the QRS complex?
    a. Has a normal duration in excess of 0.12 seconds
    b. Produces a 50-100 mV electrical signal
    c. Marks the approximate beginning of mechanical systole
    d. B and C

60. Which of the following is/are **FALSE** in regard to the electrical axis of the QRS complex?
    a. The QRS complex is always upright in leads V_1-V_6
    b. The axis is abnormal if the QRS complex is upright in leads I and AVF
    c. The QRS complex will be negative in leads I and AVF if the axis is between 0 and 90 ^{0}
    d. All of the above

61. QT interval measuring can help in the diagnosis of?
    a. Hyperkalemia
    b. Ischemia
    c. Hypothermia
    d. All of the above

62. Which of the following statements is/are **CORRECT** regarding how to differentiate a right bundle branch block (RBBB) from a left bundle branch block?
    a. RBBB has a characteristic RSR pattern in V_1
    b. RBBB has a characteristic QS pattern in V_1
    c. RBBB has a negative deflection of the QRS, while LBBB has a positive deflection
    d. All of the above

63. Which of the following statements is/are **CORRECT** regarding right atrial hypertrophy?
    a. Is often associated with right ventricular hypertrophy
    b. Is often associated with tall, wide P wave morphology
    c. Results from congenital heart disease or pulmonary hypertension
    d. All of the above

64. To interpret the heart rhythm, the ICD:
    a. Takes approximately 30 seconds to analyze the rhythm
    b. Considers rate, onset of rate increase, and stability of the complex
    c. Requires placement of 2 endocardial leads in the right and left atria
    d. All of the above

65. Which of the following is **FALSE** in regard to the deactivation of an ICD?
    a. A critical care transport team can deactivate the device without a physician's order
    b. Deactivation requires the use of a magnet
    c. The margins of the ICD should be palpated to determine precise location before deactivation
    d. Synchronous tones indicate the device is tracking the R wave

66. Failure of a pacemaker to achieve electrical capture can be caused by:
    a. Lead dislodgement
    b. Battery depletion
    c. Loose pacemaker connections
    d. All of the above

67. In regard to the proper positioning of the intra-aortic balloon, which of the following is/are **CORRECT**:
    a. Is often achieved by using the Seldinger technique for catheter placement
    b. Requires balloon placement in the abdominal aorta, beneath the renal arteries
    c. Requires balloon placement in the thoracic aorta, distal to the left subclavian artery
    d. A and C

68. Which of the following is **CORRECT** in regard to the proper timing of the balloon pump?
    a. A patient with a heart rate of 80 bpm requires balloon inflation during diastole for 1450-1500 msec
    b. An arterial catheter or clear EKG waveform must be in place to monitor timing
    c. The dicrotic notch identifies the point of balloon deflation during systole
    d. The final step in timing is the identification of the beginning of systole and diastole on the arterial waveform

69. Which of the following is/are a complication associated with IABPs?
    a. Arterial insufficiency
    b. Infection
    c. Gas embolism
    d. All of the above

70. Which of the following describes the therapeutic effects of IABP use?
    a. Balloon inflation decreases coronary artery perfusion pressure during diastole
    b. Balloon deflation increases blood flow during diastole
    c. IABP can positively affect afterload, preload, contractility, and rate
    d. B and C

71. Which of the following is/are **CORRECT** in regard to diastolic augmentation?
    a. The diastolic waveform may not be larger than the systolic waveform
    b. Augmentation helps increase coronary perfusion
    c. Augmentation occurs with inflation of the IAB during diastole
    d. All of the above

72. Which of the following statements is/are **NOT CORRECT** in regard to the proper positioning of the intra-aortic balloon?
    a. The Seldinger technique for catheter placement can be used
    b. Balloon placement should be beneath the renal arteries
    c. Balloon placement should be in the thoracic aorta, distal to the left subclavian artery
    d. None of the above

73. Which of the following statements is **CORRECT** with regard to the mechanism of action of Haloperidol?
    a. Is the opposite of Thorazine
    b. Enhances Dopamine receptors associated with mood and behavior
    c. Has strong Anticholinergic properties
    d. Is similar to Phenothiazines

74. Which of the following is/are a medication(s) used to reverse the effects of sedation?
    a. Propofol
    b. Romazicon
    c. Flumazenil
    d. B and C

75. Which of the following medications is a sedative hypnotic used to induce and maintain anesthesia?
    a. Propofol
    b. Morphine
    c. Romazicon
    d. Ativan

76. Which of the following is **CORRECT** regarding the use of Succinylcholine?
    a. It is the slowest acting non-depolarizing neuromuscular blocking agent
    b. It has prominent effects on consciousness and pain
    c. It can administered 1-2 mg/kg
    d. It can decrease intraocular pressure

77. Prolonged paralysis is a significant concern for:
    a. Patients with renal failure
    b. Elderly patients
    c. Patients receiving positive chronotropic drugs
    d. All of the above

78. Which of the following is **INCORRECT** regarding the use of Theophylline?
    a. It can cause an allergic reaction
    b. It has a long half-life
    c. Administration at a rate of greater than 10 ml/min will result in hypertension
    d. Toxicity may be exhibited by nausea, vomiting, ventricular dysrhythmias and death.

79. The effects of beta 2 stimulation include:
    a. Histamine inhibition
    b. Increased inotropic activity
    c. Vasoconstriction
    d. Bronchodilation

80. Which of the following is **CORRECT** regarding the administration of Dopamine?
    a. It results in predominantly alpha effects at moderate dose
    b. It results in renal dilation at low dose
    c. It stimulates dopaminergic receptors at high dose

d. It results in significant vasoconstriction at low dose

81. Which of the following is/are **CORRECT** regarding the use of plasmanate?
I. It contains albumin, sodium, and globulin
II. It is given at a rate of 100 ml/min
III. It expands 1 ml per every ml administered
IV. It causes severe hypertension

a. I
b. I, III
c. III, IV
d. I, II, IV

82. A 55 year old female is experiencing a hypertensive emergency. You may administer a calcium channel blocker known as _____, or an ACE inhibitor, known as_____:
a. Clonidine, Captopril
b. Captopril, Nifedipine
c. Nifedipine, Clonidine
d. Nifedipine, Captopril

83. Which of the following is **CORRECT** with regard to Magnesium sulfate?
a. The first line medication for the treatment of bronchoconstriction
b. Used after beta agonists have failed to correct bronchoconstriction
c. Able to inhibit cellular sodium uptake
d. Administered 100 - 200 mg in 50 ml, over 20 minutes

84. Which of the following is/are **CORRECT** regarding Class III Antidysrhythmics?
a. Can effectively shorten PR, QRS, and QT intervals
b. Includes Amiodarone
c. Are used to treat ventricular tachycardia
d. B and C

85. Calcium Channel Blockers:
a. Increase conduction velocity and automaticity in the SA and AV nodes
b. Are used to treat wide complex SVT
c. Include Diltiazem
d. Can aid patients with sick sinus syndrome

86. Which of the following is/are **CORRECT** regarding thrombolytic therapy?
a. Patients younger than 75 years of age derive the greatest benefits
b. Patients younger than 75 years of age are at greater risk for bleeding complications
c. Their use can result in early reperfusion and limited infarct size
d. All of the above

87. Which of the following is an adverse reaction to TPA?
a. Fever
b. Intracranial bleeding
c. Hypertension
d. None of the above

88. You need to administer a loading dose of 5 mg/kg of Aminophylline to a 110 pound adult female with asthma. This dose is to be administered over 30 minutes. You have a 250 ml bag of normal saline, a 500 mg vial of Aminophylline, and a 10 gtts/cc administration set. What is the concentration of the Aminophylline when mixed in the bag?
    a. 1 mg/ ml
    b. 2 mg/ ml
    c. 3 mg/ ml
    d. 4 mg/ ml

89. What is the actual dose of Aminophylline to be administered to the patient?
    a. 100 mg
    b. 250 mg
    c. 400 mg
    d. 500 mg

90. How many milliliters of Aminophylline must you administer?
    a. 50 ml
    b. 100 ml
    c. 125 ml
    d. 250 m

91. How many drops would you run this initial drip?
    a. 33 gtts / min
    b. 42 gtts / min
    c. 66 gtts / min
    d. 83 gtts / min

92. A trauma patient presents with left upper quadrant pain, and referred pain to the scapulae. These complaints most likely are from an injury to the:
    a. Liver
    b. Aortic arch
    c. Gall bladder
    d. Spleen

93. Which of the following is/are **CORRECT** with regard to the presentation of patients with liver ailments?
    a. Jaundice.
    b. Clotting disorders.
    c. Inability to tolerate low-fat diets.
    d. A and B

94. The diagnostic phenomenon occurring when some signals arising from nerves in one part of the body are mistaken by the central nervous for signals from another area is/are known as:
    a. Rebound tenderness
    b. Referred pain
    c. Murphy's sign
    d. B and C

95. Of the following patients, which would be a good candidate for placement of a nasogastric tube:
    a. A trauma patient with a suspected basilar skull fracture
    b. A patient with a nasal fracture and deviated septum
    c. A patient with a perforated esophagus
    d. A patient with a distended abdomen

96. After inserting a nasogastric tube 10 centimeters, you suddenly meet resistance and cannot further advance the tube. Your next action should be:
    a. Have the patient continue to swallow
    b. Add lubricant to the tube
    c. Remove the tube and reattempt placement
    d. Twist the tube and advance it more forcefully

97. Which of the following patients **IS NOT** a candidate for placement of a Foley catheter?
    a. A 78-year-old male complaining of urinary retention secondary to prostatic hypertrophy
    b. A 21-year-old female about to undergo emergency surgery following a high-speed motor vehicle accident
    c. A 49-year-old male, just admitted to ICU, still unconscious following open- heart bypass surgery
    d. A 6-year-old male, in the ER for acute epiglottitis

98. Which of the following is **FALSE** in regard to assessment methods following the insertion of a Foley catheter?
    a. Palpation of the kidneys
    b. Checking tube for urine drainage
    c. Adjusting tube for patient comfort
    d. Inflating balloon for adequate security of catheter

99. Which of the following **IS NOT** considered abnormal findings in urine?
    a. Leukocytes
    b. Erythrocytes
    c. Urochromes
    d. Albumin

100. During transport, the collection bag for the Foley catheter should be:
    a. Hung above the patient, preferably at the same level as the patient's IV bag
    b. Hung at a lower level than the patient's bladder
    c. Hung on the edge of cot, with the tubing clamped securely
    d. Removed, since the Foley catheter should be discontinued during transport

101. Which of the following is **CORRECT** regarding the inclusion of risk factors for renal failure?
    a. Diabetes
    b. Diverticulitis
    c. Stomach Ulcers
    d. High cholesterol

102. Peritoneal dialysis utilizes the concept of osmosis and diffusion of waste products within the peritoneal cavity. Diffusion is defined as:
    a. Movement of water molecules from higher concentration to lower concentration
    b. Movement of particles from higher concentration to lower concentration
    c. Movement of particles from lower concentration to higher concentration
    d. Movement of particles utilizing insulin as a facilitator

103. A "fistula" is a/an:
    a. Artificial graft placed on a blood vessel
    b. Surgically created anastomosis between an artery and a vein
    c. Opening into the peritoneum for dialysis access
    d. Portion of the dialysis machine that filters waste products from blood

104. Which of the following **IS NOT** a major component of a Neurological Examination?
   a. Mental status
   b. Cranial nerve function
   c. Receptive nerve function
   d. Sensory nerve function

105. A common test that could be used to check for cerebellar function which is conducted by having the patient stand with feet together, with his eyes open and then with his eyes closed and observing for any sway or loss of balance is called:
   a. Cushing's test
   b. Rapidly alternating movement test
   c. Romberg test
   d. Halo test

106. According to the Monroe-Kellie Doctrine, intracranial volume is composed of:
   a. 10% CSF, 80% blood and 15% brain mass
   b. 10% CSF, 15% blood and 80% brain mass
   c. 05% CSF, 10% blood and 80% brain mass
   d. 10% CSF, 10% blood and 80% brain mass

107. The point at which displaced volume has been exhausted and a severe rise in ICP is caused by a small increase in volume is seen on an ICP monitor as:
   a. A flat line
   b. A curved line
   c. A vertical inflection point
   d. None of the above

108. The normal measurement of ICP is between ___ and ___ mmHg.:
   a. 0, 10
   b. 5, 15
   c. 15, 20
   d. 20, 25

109. An abnormal wave formation involving plateau waves resembling a pattern similar to ventricular fibrillation, and indicating impending herniation and neurological deterioration:
   a. A waves
   b. B waves
   c. C waves
   d. D waves

110. You are transporting a patient with an ICP monitor, and the patient starts to become restless, disoriented, and agitated. The heart monitor shows a sinus rhythm with occasional PVCs. Your initial treatment should include:
   a. 25g of D_{50} to reverse hypoglycemia
   b. 100% oxygen to reverse hypoxia
   c. 0.2 mg of Fentanyl to achieve a sedative effect, causing hypotension and reducing ICP
   d. 40 mg of Lasix to cause the desired diuretic effect

111. Which of the following is/are **CORRECT** with regard to the results of an increase in intracranial pressure?
   a. Seizures
   b. Brain herniation
   c. Stroke
   d. All of the above

112. Which of the following medications will help decrease ICP?
   a. Mannitol
   b. Nitrous oxide
   c. Thiopental
   d. A and C

113. Which patient presentation would **MOST** concern you?
   a. An 8 month old infant with a respiratory rate of 60, nasal flaring, warm dry skin, and capillary refill time under 1 second
   b. A 5 year old with a respiratory rate of 12, severe intercostals retractions, abdominal breathing, mottled upper and lower extremities, and cool dry skin
   c. A 13 month old with a heart rate of 135, skin rash, hot moist skin, and a blood pressure of 80/52
   d. A 2 year old with a respiratory rate of 44, nasal flaring, mild sternal retractions, and blood pressure of 86/50

114. Which of the following statements is **FALSE** in regard to reducing fear in the pediatric patient?
   a. Tower over the child when talking to him/her
   b. Allow parents to remain with the child
   c. Use age appropriate words
   d. Always tell children the truth about procedures and pain

115. Which of the following is/are **CORRECT** with regard to the pediatric cardiovascular system?
   I. Immature sympathetic system
   II. Hypotension is an early sign of shock
   III. Cardiac output is rate dependent
   IV. Heart is proportionally larger than in an adult

   a. I, III
   b. I, III, IV
   c. II, III
   d. III, IV

116. When administering Colloids to a pediatric patient, what is the **CORRECT** flow rate?
   a. 20 cc/kg
   b. 5 cc/kg
   c. 10 cc/kg
   d. 1-2 cc/kg

117. Which of the following is/are **CORRECT** when assessing VP or VA shunt mechanical malfunctions?
   I. Vomiting
   II. Seizures
   III. normothermic
   IV. Signs of increased intracranial pressure
      a. II
      b. III, IV
      c. I, II, IV
      d. I, II, III, IV

118. When using a Buretrol to administer medications to a pediatric patient, which of the following would be the **CORRECT** way to calculate the dosage:
   a. 1 mg of drug x child's weight (lbs) in 100 cc fluid
   b. 5 mg of drug x child's weight (kg) in 50 cc fluid
   c. 3 mg of drug x child's weight (kg) in 75 cc fluid
   d. 6 mg of drug x child's weight (kg) in 100 cc fluid

119. You are transporting a 4 year old child who requires reversal of a narcotic. Which of the following is the **CORRECT** dose of Narcan to use?
   a. 0.1 mg/kg
   b. 0.01 mg/kg
   c. 2 mg IV, IM or SQ
   d. 0.05-1 mg

120. You are caring for a 3 year old, 15 kg child who requires intubation. The **CORRECT** size ET tube to select is:
   a. 4.0 uncuffed
   b. 4.5 uncuffed
   c. 5.0 cuffed
   d. 5.5 cuffed

121. Pregnancy produces changes to the cardiovascular system, such as:
   a. Increased blood volume & cardiac output; decrease in peripheral vascular resistance and blood pressure
   b. Decreased heart rate and cardiac output
   c. Passive filling of the placental unit to circulate blood to the fetus
   d. Higher cardiac outputs and decreased preload

122. DIC may develop in pregnancy when the following conditions exist:
   a. Hemorrhage, sepsis or preterm
   b. Hemorrhage, sepsis, mild pre-eclampsia or fetal death
   c. Trauma, sepsis or placenta previa
   d. Abruptio placentae, severe preeclampsia, sepsis or fetal death

123. Regarding pregnancy-induced hypertension, which of the following fetal complications is/are **CORRECT**?
   I. Growth retardation
   II. Fetal distress
   III. Abruptio Placenta
   IV. Fetal death

   a. IV, II
   b. I, III, IV
   c. III only
   d. All of the above

124. Premature rupture of membranes is characterized by all of the following **EXCEPT**:
   a. Rupture of membranes prior to 37 weeks
   b. Results in a high risk of infection
   c. Fluid is brownish in color and foul-smelling
   d. None of the above

125. Prior to interfacility transport of a patient in pre-term labor, the Critical Care Professional should obtain which of the following:

I. Frequency of contractions
II. Dilitation
III. Effacement
IV. Allergies
V. Station

a. I, II, III
b. I, II, III, IV and V
c. II, IV and V
d. I, III and V

126. With regard to major complications of electrical burns, which of the following **IS NOT** correct?

a. Results in fractures
b. Causes cardiac dysrhythmias
c. Extent of burn predicted by BSA
d. Causes compartment syndrome

127. Inhalation injuries are characterized by which of the following:

a. Singed nasal hairs
b. Soot in or around the mouth
c. Dyspnea
d. All of the above

128. When caring for a critical burn patient, which of the following is of greatest concern within the first 24 hours?

a. Septic shock
b. Hypertension
c. Hyperglycemia
d. Hypovolemic shock

129. Morphine is the drug of choice for pain management in the burn patient, which of the following is the **most** appropriate route of administration?

a. IM
b. IV
c. ETT
d. SQ

130. Fluid resuscitation of an adult burn patient is based on which of the following:

a. Parkland formula
b. Total body surface area burned
c. Severity and location of the burns
d. Administration of 20 cc/kg