CCEMTP

Self-Assessment Test #2

***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. A Critical Care Transport Team is composed of:

A. LPN, Paramedic, First Responder
B. EMT driver, RN, Paramedic
C. Physician, Paramedic
D. Paramedic, RN, Phlebotomist

2. Which of the following advanced procedures can be utilized by a Critical Care Transport Team?

A. Rapid Sequence Induction
B. Monitoring of an arterial line
C. Needle and Surgical cricothyrotomy
D. All of the above

3. If a patient needs to be transported to a facility approximately 110 miles away, the preferred mode of transport is:

A. Ground
B. Fixed wing
C. Rotor
D. Mobile

4. An effective method for reducing the risk of liability is:

A. Avoiding high risk patients likely to file a lawsuit
B. Adequately documenting all procedures
C. Being knowledgeable about the professional standards of care that apply to you
D. B and C

5. Patient diagnosis and treatment should be based on:

A. Current laboratory data for the patient
B. Thorough patient history
C. Findings of the physical examination
D. All of the above

6. A 35 year old female patient has been admitted with a chief complaint of severe headache, nausea and vomiting, and photophobia. What do the following CBC values indicate? HCT 40, Hgb 14, RBC 4.5, WBC 5000

A. Normal values
B. Abnormally high hemoglobin
C. Abnormally low RBC and WBC counts
D. Abnormally high hematocrit

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7. In arterial blood gas interpretation, PaO_2 and $PaCO_2$ reflect the _____ component, while HCO_3^- and base excess reflect the _____ component.

A. Respiratory; metabolic
B. Metabolic; respiratory
C. Oxygenation; ventilation
D. Ventilation; oxygenation

8. Which of the following blood gas values reflects compensation?

A. pH 7.35; PCO2 60; HCO3 30
B. pH 7.26; PCO2 55; HCO3 24
C. pH 7.48; PCO2 30; HCO3 22
D. pH 7.30; PCO2 32; HCO3 18

9. As a critical care transport professional, your legal and professional obligations to the patient include:

A. Knowing applicable policies and procedures
B. Providing competent care within your scope
C. Providing reasonable and prudent care
D. All of the above

10. Increased Liver enzymes can indicate:

A. TB
B. Flu
C. HIV
D. Hepatitis

11. A 26 year old has undergone extensive surgery requiring blood transfusions. Urinalysis reveals the presence of hemoglobinuria, a condition in which:

A. There is an abnormal presence of blood in the urine
B. Excessive hemoglobin is present for oxygen transport
C. Hemoglobin is present in the urine, unattached to red blood cells
D. A and B

12. A test used to determine the presence of occult blood in the GI tract is:

A. Guaiac
B. Prothrombin
C. Thromboplastin
D. CSF

13. Shock can occur as a result of fluid shifting from the intravascular space to the extravascular space. This can result from:

A. Loss of extravascular integrity
B. Decreased capillary membrane permeability
C. Decreased colloidal osmotic pressure
D. None of the above

14. The initial signs and symptoms of _____ shock will be hindered if the patient is taking beta-blockers:

A. Superficial
B. Compensated
C. Decompensated
D. Irreversible

15. Which of the following is least likely to develop Multiple System Organ Failure?

A. An 86 year old female in septic shock
B. A 12 year old with a spiral fracture of the left radius/ulna
C. A farmer suffering from organophosphate poisoning
D. A 26 year old male that is HIV positive

16. Which of the following physiologic data is useful in diagnosing sepsis?

A. Cultures of blood, urine, sputum or wounds
B. Arterial blood gases reflecting hypoxia and respiratory alkalosis
C. CBC reflecting elevated WBC counts
D. All of the above

17. Which of the following IS NOT a major component of the immune system?

A. Leukocytes
B. Lymphocytes
C. Antigens
D. Antibodies

18. Transmission of the Herpes Zoster virus results in a disease known as:

A. Hepatitis B
B. HIV
C. Kaposi Sarcoma
D. Shingles

19. Which of the following statements is FALSE regarding right to left cardiac shunting?

A. There is enough hemoglobin to carry the oxygen
B. The heart is strong enough to circulate the blood
C. Some venous blood never passes through the lungs
D. The lungs fail to fully oxygenate the blood

20. In assessing a patient with asthma, the PaO2 will assist in obtaining information of what nature:

A. The effectiveness of ventilation
B. The degree of dyspnea
C. The efficiency of gas exchange
D. The patient's functional respiratory status

21. Which of the following IS NOT a component of an arterial blood gas measurement?

A. Acid-base balance
B. Bicarbonate levels
C. Oxygen saturation
D. Hemoglobin

22. Which statement is correct regarding tension pneumothorax?

A. Air enters the pleural space during inspiration and becomes trapped
B. Breath sounds remain adequate on the affected side
C. Absence of tracheal deviation rules out the diagnosis
D. It occurs only after penetrating trauma

23. In regard to pleural decompression, the "Angle of Louis" is:

A. The proper site for needle punctures
B. Used to locate the mid-clavicular line
C. Used to locate the second intercostal space
D. Used to locate the lateral puncture site

24. After 200 mL of clear amber pleural fluid has been removed from the right pleural space, which position is most likely to optimize oxygenation during transport if tolerated?

A. Semi-Fowler's or Fowler's
B. Right lateral recumbent
C. Prone
D. Supine

25. Which of the following is FALSE with regard to the indications for the placement of a chest tube?

A. Pleural effusion
B. Hemothorax
C. Pulmonary embolus
D. Pneumothorax

26. Which of the following is the best way to determine proper chest tube positioning?

A. Lung sounds are auscultated
B. A chest x-ray is performed
C. ABG's are drawn
D. Oxygen saturation will increase

27. Which of the following is CORRECT with regard to the ideal position for transporting a patient with a chest tube?

A. Fowler's
B. Trendelenburg
C. Supine
D. Left laterally recumbent

28. Which statement is most accurate regarding transport ventilators?

A. They cannot deliver minute volumes comparable to a bag-valve mask
B. Many older transport units deliver controlled ventilation only
C. All models are equally appropriate for every age group
D. Pressure-limiting valves should always be disengaged

29. A patient on a portable ventilator suddenly develops dyspnea and unilateral chest pain. Lung sounds are absent on one side. Hypotension and tracheal deviation are also present. Which of the following is the CORRECT action for these findings?

A. Suction the patient
B. Reposition the endotracheal tube
C. Increase the VT on the ventilator until bilateral lung sounds return
D. Suspect a tension pneumothorax

30. Which of the following is the most serious drawback of using positive pressure/demand valves?

A. Lung compliance cannot be felt
B. High airway pressures are created
C. They consume a high volume of oxygen
D. They require an external power source

31. Which statement is correct regarding endotracheal suctioning?

A. The maximum suction pass should last up to 30 seconds
B. Apply suction during catheter insertion
C. Rigid suction catheters are contraindicated in all trauma patients
D. Use sterile technique with a soft, flexible suction catheter

32. Which of the following IS NOT a goal of Rapid Sequence Induction?

A. Allows visualization of airway anatomy for the intubation of c- spine injured patients
B. Rapid airway control with minimal trauma
C. Prevention of aspiration and regurgitation
D. Prevent rise in intracranial pressure

33. Which statements are FALSE regarding succinylcholine?

I. Its effects can be reversed with naloxone
II. Typical RSI dosing is 1-2 mg/kg IV
III. It is contraindicated solely because a patient has agonal respirations
IV. It is a nondepolarizing neuromuscular blocker

A. I and II only
B. II and III only
C. III only
D. I, III, and IV

34. Which of the following IS NOT an indication for a tracheostomy?

A. To protect the lower airway from aspiration
B. Reduce anatomical dead space
C. When intubation is delayed
D. Long term mechanical ventilation

35. Proper lung auscultation includes listening to breath sounds:

A. For a full minute at the apex and base
B. For a full breath at the apex and base, anterior and posterior (6 places)
C. Where the suspected problem lies
D. Every 3-5 minutes in critical patients

36. Which is the most lethal early complication of a tracheostomy during transport?

A. Tracheal stenosis
B. Pneumonia
C. Prior endotracheal intubation
D. Accidental displacement or decannulation

37. Which of the following is CORRECT with regard to needle cricothyrotomy?

A. It requires more time as compared to a surgical cricothyrotomy
B. It requires minimal equipment
C. A more definitive airway is urgently warranted
D. Retrograde airflow through the mouth and nose are not a concern

38. Airflow into the lungs during inspiration depends on all of the following EXCEPT:

A. Contraction of the muscles of respiration
B. Enlargement of the thoracic cavity
C. Lowered intrathoracic pressure
D. Relaxation of the diaphragm

39. Which of the following procedures should be attempted prior to establishing a surgical airway?

I. Needle cricothyrotomy **II. Heimlich maneuver**
III. Intubation **IV. Mechanical removal of an obstruction with forceps**

A. I, II, III
B. I, II, IV
C. I, III, IV
D. II, III, IV

40. Which statements are correct regarding retrograde intubation?

I. It requires hyperflexion of the neck **II. It can be performed despite blood in the upper airway**
III. It is an alternative when cricothyrotomy would otherwise be considered
IV. It may be used when orotracheal intubation is contraindicated

A. I, III, and IV
B. I, II, and III
C. II and IV
D. II, III, and IV

41. To perform retrograde intubation, the guide wire must be:

A. Approximately 30 mm. in length
B. Approximately 70 cm. in length
C. Long enough to cover the distance between the nares and the sterno-clavicular angle
D. B and C

42. Which of the following is FALSE regarding non-tunneled central catheters?

A. They are typically smaller bore catheters
B. They may have single or multiple lumens
C. They may be inserted centrally or peripherally
D. They are used for short term therapy

43. When a pulmonary artery catheter is wedged, what information is available?

A. Right atrial blood flow dynamics
B. The cardiac output
C. Electrical activity in the heart
D. The left ventricular end-diastolic pressure

44. A Swan-Ganz catheter is in place. Which of the following would be an inappropriate action if no waveform shows on the monitor?

A. Flush the catheter
B. Check the monitor calibration
C. Check the position of the stopcock
D. Check for loose connections

45. Which systemic vascular resistance (SVR) value is clearly abnormal and most consistent with pathologically low SVR?

A. 400 dynes/cm^5
B. 1000 dynes/cm^5
C. 1200 dynes/cm^5
D. 1400 dynes/cm^5

46. Which of the following is CORRECT regarding the purpose of zero referencing?

A. It calibrates the transducer to known accurate mercury manometer
B. It balances the transducer to atmospheric pressure
C. It matches the dome of the transducer to the phlebostatic axis
D. It levels the transducer for accurate readings

47. Which of following is CORRECT regarding the formula? Systolic + 2 diastolic = 3

A. RVC
B. MAP
C. Pulse pressure
D. Pulmonary capillary wedge pressure

48. Which of the following would result in low values on the monitor?

I. Transducer above phlebostatic level **II. Transducer below phlebostatic level**
III. Air bubbles or clot in the catheter **IV. Catheter fling**

A. I, II
B. II, III
C. I, III
D. II, IV

49. Which type of blood preparation would eliminate disease transmission and the possibility of transfusion reaction?

A. Autologous
B. Homologous
C. Defibrinogenated
D. Elimination of these risks is not possible

50. Which of the following is CORRECT regarding the major determinants of blood compatibility?

A. ABO blood groups and the Rh system
B. Age and sex of donor and recipient
C. Hemoglobin and hematocrit
D. Type of blood product

51. Which of the following is the best product to infuse in regard to reducing the risk of volume overload, when multiple units of blood are to be infused?

A. Whole blood
B. Immune globulins
C. Specific factor therapy
D. Packed red blood cells

52. Which of the following is CORRECT regarding the primary importance when preparing to administer blood?

A. Documenting baseline vital signs
B. Administering normal saline
C. Asking a second professional to confirm blood compatibility
D. Obtaining a written order for the transfusion

53. Hemolytic transfusions can occur as long as _____ after transfusion:

A. 2 hours
B. 2 days
C. 14 days
D. 1 week

54. Which of the following statements is/are FALSE?

I. The muscular layer of the heart is the endocardium
II. The two-layered sac surrounding the heart is the pericardium
III. The lining of the heart chambers is the epicardium
IV. One of the three layers of tissue that form the wall of the heart is the endometrium

A. I
B. I, III
C. III, IV
D. I, III, IV

55. Which of the following is CORRECT in regard to the nervous system control of the heart?

A. The sympathetic nervous system innervates the heart through the cardiac plexus
B. The vagus nerve acts as a cardiac accelerator
C. Norepinephrine is the chemical neurotransmitter for the parasympathetic nervous system
D. The release of acetylcholine speeds the heart rate

56. Which of the following is FALSE in regard to the electrophysiology of the heart?

A. The normal electrical state of cardiac cells is known as the action potential
B. When myocardial cells are stimulated, there is a rapid influx of sodium ions
C. When sodium ions rush into a cell, the cell becomes positively charged
D. There are three types of cardiac cells: pacemaker, electrical conducting, and myocardial

57. Which statement is correct regarding lead placement and categories in a standard 12-lead ECG?

A. Leads I, II, and III are unipolar chest leads
B. aVR, aVL, and aVF are augmented unipolar limb leads
C. V1-V6 are bipolar chest leads
D. Both B and C

58. Which of the following is CORRECT in regard to the components of the electrocardiogram?

A. The ST segment reflects the time from the end of ventricular depolarization to the beginning of ventricular depolarization
B. The shape and appearance of a waveform is referred to as the morphology
C. The normal PR interval is 0.10- 0.12 seconds
D. The horizontal axis on ECG paper measures voltage, while the vertical axis measures time

59. A 59 year old male has been diagnosed with an inferior wall infarction. Which of the following statements is CORRECT regarding his 12 Lead interpretation?

A. Indicative changes in Leads II, III, and AVF suggest the infarct is due to right coronary artery occlusion
B. Indicative changes in leads viewing the septal, anterior, or lateral walls of the left ventricle suggest the infarct is due to left coronary artery occlusion
C. Lead AVR is not critical to this diagnosis
D. All of the above

60. Which of the following IS NOT a primary component of 12 Lead ECG interpretation?

A. Assessing Q wave presence and morphology
B. Calculation of the electrical axis of the T wave and P wave
C. Inspection of P waves for hypertrophy
D. Assessment of ST segment for elevation or depression

61. Which of the following is CORRECT in regard to aberrant conduction?

A. It represents a normal finding
B. It results in a supraventricular beat conducted through the ventricles in a delayed manner
C. It is easy to distinguish PJCs with aberrancy from PVCs in Lead II
D. It is an atrial conduction disturbance

62. Which finding best supports a bifascicular conduction abnormality?

A. A widened QRS with an RBBB pattern in V1/V2 plus axis deviation
B. An isolated negative deflection in lead aVF
C. Left axis deviation in leads II and III only
D. A and B

63. Active Myocardial injury can be indicated on an ECG by:

A. A depressed ST segment
B. An elevated ST segment
C. The absence of a P wave
D. The presence of U waves

64. Which statement is most accurate regarding patients who have an implanted cardioverter-defibrillator (ICD)?

A. They have a one-year sudden cardiac death mortality of only 10% in all cases
B. They are implanted primarily for recurrent inducible heart block
C. Most can resume normal activity and travel with appropriate precautions
D. They should avoid all handheld metal detectors under all circumstances

65. Which of the following represents information that should be obtained to help troubleshoot a pacemaker problem:

A. Pacemaker rate, output, and sensitivity parameters
B. The patient's present underlying rhythm
C. The type and position of the leads
D. All of the above

66. Which of the following is FALSE with regard to the indications for Intra-Aortic Balloon Pump (IABP) counter-pulsation?

A. Aortic valve incompetence
B. Cardiogenic shock secondary to infarction
C. Postoperative left ventricular failure
D. Severe unstable angina

67. The IABP catheter is attached to a machine which:

A. Removes gas from the aorta
B. Displays the patient's ECG and arterial waveform
C. Has an electronic trigger mechanism for the balloon pump
D. B and C

68. A patient is on an IABP. Balloon inflation is occurring after the dicrotic notch. What timing error is this?

A. Early Inflation
B. Late inflation
C. Early deflation
D. Late deflation

69. Which of the following is/are CORRECT with regard to a contraindication for the use of an IABP?

A. Aortic aneurysm
B. Ventricular septal defect following infarction
C. Severe peripheral vascular occlusive disease
D. A and C

70. Which statement is correct regarding proper intra-aortic balloon positioning?

A. The Cramer technique is standard for catheter placement
B. The balloon tip should lie below the renal arteries
C. The balloon should be in the thoracic aorta distal to the left subclavian artery
D. Both B and C

71. Which of the following is a complication associated with IABPs?

A. Arterial insufficiency
B. Gas embolism
C. Limb ischemia
D. B & C

72. Which statement is correct regarding proper timing of an intra-aortic balloon pump?

A. At a heart rate of 80 bpm, inflation should last 1450-1500 msec during diastole
B. A clear arterial waveform or ECG trigger is required to assess timing accurately
C. The dicrotic notch marks balloon deflation
D. The final timing step is simply identifying systole and diastole on the waveform

73. Haloperidol is indicated for:

A. Substernal chest pain
B. Acute psychotic episodes and combativeness
C. Coma
D. Depression

74. The primary mechanism of action of benzodiazepines is:

A. Beta-1 and beta-2 receptor stimulation
B. Enhancement of GABA-mediated inhibitory neurotransmission
C. Inhibition of prostaglandin synthesis
D. Blockade of dopamine receptors

75. Which of the following statements is CORRECT in regard to how Flumazenil works?

A. Antagonizing Barbiturate and Opiate receptor sites
B. Antagonizing Benzodiazepine receptor sites
C. Increasing systemic vascular resistance
D. Exerting a positive inotropic effect on the heart

76. Which of the following is/are true about Morphine?

I. It is a central nervous system stimulant **II. It binds with opiate receptors in the brain**
III. Nausea and vomiting frequently accompany administration **IV. Its duration is 3-7 hours**

A. I, II
B. II, III
C. I, II, III
D. II, III, IV

77. A nondepolarizing neuromuscular blocking agent used to maintain paralysis following intubation, and lasting approximately 30 minutes:

A. Vecuronium
B. Diazepam
C. Succinylcholine
D. Pancuronium

78. Which of the following is/are CORRECT in regard to the classification of Albumin and Dextran:

A. Crystalloids
B. Colloids
C. Plasmanates
D. All of the above

79. Which statements are correct regarding dextran?

A. I only
B. II only
C. I and III
D. I and IV

80. Which of the following IS NOT a vasopressor?

A. Norepinephrine
B. Epinephrine
C. Dopamine
D. Dobutamine

81. Which statement is FALSE regarding dobutamine?

A. It improves the force of cardiac contraction
B. It may increase cardiac output and urine output
C. It can cause hypotension and tachycardia at higher doses
D. Its primary effect is marked peripheral vasoconstriction

82. Which statement is FALSE regarding albuterol?

A. It is a potent bronchodilator
B. Its clinical effect may last several hours
C. A standard nebulized dose is only 0.25 mg
D. It is commonly available in metered-dose inhaler form

83. Which of following is CORRECT in regard to Anticholinergics?

A. Are more potent than beta agonists
B. Have a more rapid onset
C. Have a longer duration
D. Produce bronchodilation in cholinergic mediated bronchoconstriction

84. An example of a Class III Antiarrhythmics would be:

A. Metoprolol
B. Esmolol
C. Amiodarone
D. A & B

85. Which of the following is/are CORRECT in regard to the use of Amiodarone?

A. It has a short half-life
B. It can be used in lower doses to improve renal function
C. It is administered in an initial dose of 300mg for cardiac arrest due to shock resistant V-Fib
D. All of the above

86. Which of the following is/are CORRECT regarding the use of beta blockers?

I. The higher the dose, the more they lose selectivity

II. Their adverse effects include fatigue and malaise

III. They are indicated for hypertension

IV. caution should be exercised when giving to CHF patients

A. I, II
B. II, IV
C. I, III, IV
D. I, II, III, IV

87. Similarities between Streptokinase and TPA include:

A. Both convert plasminogen to plasmin
B. Both cost approximately the same
C. Both have the same half life
D. A and C

88. You need to administer a loading dose of 0.05 mcg/kg/min of Norepinephrine to a 140 pound adult female in distributive shock with asthma. This dose is to be administered over 30 minutes. You have a 250 ml bag of normal saline and 8mg vial of Norepinephrine and a 10 gtts/cc administration set. What will be the concentration of the Norepinephrine when mixed in the bag?

A. 181 mcg/ ml
B. 32 mcg/ ml
C. 43 mcg/ ml
D. 44 mcg/ ml

89. What is the actual dose of Norepinephrine to be administered to the patient?

A. 4.0 mcg/min
B. 3.2 mcg/min
C. 3.8 mcg/ming
D. 5.0 mcg/min

90. How many milliliters/hour of Norepinephrine must you administer?

A. 5.5 ml/hr
B. 6.41 ml/hr
C. 5.2 ml/hr
D. 0.52 ml/hr

91. Which description best matches norepinephrine (Levophed)?

A. Predominantly inotropic with direct vasodilator effects
B. Strong beta-1 and moderate beta-2 effects that decrease PVR
C. Predominantly alpha-adrenergic vasoconstriction with some beta-1 effects
D. An endogenous catecholamine with no alpha activity

92. You must administer a Dopamine infusion at 10 mcg/kg/min to a 176 pound male with hypotension associated with cardiogenic shock. You have 200 mg of Dopamine, a 250 ml bag of D5W, and a 60 gtts/cc administration set. How many drops per minute should you infuse?

A. 15
B. 30
C. 45
D. 60

93. A patient presenting with profuse hematemesis with frank red blood, and a history of significant alcohol abuse is/are mostly likely caused by:

A. Kidney stones
B. Esophageal varices
C. Gastric hemorrhage
D. B and C

94. Which of the following IS NOT an abnormal finding in the abdominal assessment:

A. Rebound tenderness
B. Shoulder discomfort
C. Bowel sounds heard approximately every 15-30 seconds
D. Consistent rigidity and guarding of the abdominal wall

95. A thin female patient is supine on the cot during your assessment. You palpate a strong pulse at her umbilicus. This is likely due to:

A. The normal condition of her abdominal aorta
B. An abdominal aortic aneurysm
C. An ectopic pregnancy
D. A gross anatomic abnormality

96. You receive a patient with an NG tube already in place. After injecting air, you do not hear a gastric rush over the epigastrium. What is the best next step before transport?

A. Remove or otherwise re-verify the tube before transport
B. Transport anyway; the tube is adequate
C. Place the patient laterally and listen again only
D. Insert a second orogastric tube

97. Which of the following actions can help prevent diarrhea and other gastrointestinal complications associated with enteral feedings?

A. Increasing the rate of feedings
B. Decreasing the amount of water being added to the nutritional solution
C. Administering the feeding as a bolus every 2 hours
D. Changing the administration set every 24 hours

98. Which of the following statements is/are CORRECT with regard to the purpose of a Foley catheter?

A. Observe the condition of urine for blood and other abnormal contents
B. Allow urine to freely exit the body
C. Closely monitor urine volume production
D. All of the above

99. No urine is found in the Foley catheter after placement. This could be caused by:

A. Incorrect placement of the catheter
B. An empty urinary bladder
C. The catheter clamp remains in place
D. All of the above

100. Following placement of a Foley catheter, the patient develops an infection. Which of the following is not a sign or symptom of that infection?

A. WBCs in the urine culture
B. Clear urine
C. Fever
D. Altered mental status

101. A colostomy is a surgical procedure likely required for patients with:

A. Obstruction of the small intestine
B. Rectal cancer
C. Blood accumulation in the stomach
D. All of the above

102. Which of the following will be altered by renal failure?

A. pH level
B. Blood pressure
C. Hematocrit
D. All of the above

103. Which of the following IS NOT a risk factor for a patient undergoing peritoneal dialysis?

A. Fistula graft rejection
B. Peritonitis
C. Decreased bowel sounds
D. Elevated white blood cell count

104. Which of the following is/are a cause of hypotension during or following dialysis?

A. Disequilibrium syndrome
B. Anxiety about the procedure
C. Excessive filtration of the blood
D. Infectious processes associated with the procedure

105. An inappropriate motor response in a comatose patient characterized by flexion of the arms, wrists, and fingers, adduction of the upper extremities, and extension, medial rotation and planter flexion of the lower extremities is known as:

A. Decerebrate posture
B. Dysphasia posture
C. Decorticate posture
D. Fasciculation posture

106. When documenting deep muscle reflex response, a grade of ____ is used to indicate a normal or expected response.

A. 2
B. 3
C. 4
D. 5

107. The intracranial volume-pressure curve demonstrates the relationship between:

A. Changes in blood pressure and intracranial pressure
B. Changes in brain mass and intracranial pressure
C. Changes in volume and intercranial pressure
D. Changes in volume and intracranial pressure

108. Which of the following is FALSE regarding the advantages of using an interventricular catheter (IVC)?

A. Ability to drain CSF to lower ICP
B. Reduced risk of infection
C. Increased accuracy in ICP monitoring
D. Reliability

109. A 42 year old patient with serious head trauma has an intracranial pressure of 19 mmHg. This indicates that his ICP is:

A. Normal
B. Slightly elevated
C. Moderately elevated
D. Severely elevated

110. Mean arterial pressure (MAP), minus intracranial pressure (ICP), equals _____:

A. Coronary artery pressure (CAP)
B. Central venous perfusion pressure (CVPP)
C. Cerebral perfusion pressure (CPP)
D. Cervical spinal fluid pressure (CSFP)

111. Which drugs have traditionally been taught as potentially increasing intracranial pressure and therefore warranting caution in severe head injury?

I. Ketamine II. Diazepam III. Nitroprusside IV. Mannitol V. Oxygen

A. I, III, IV, and V
B. I, II, and III
C. II, III, and IV
D. I, III, and V

112. In order to decrease ICP, the patient's head should be:

A. Aligned with neck
B. Hyperextended
C. Hyperflexed
D. Rotated to the left

113. Which of the following is CORRECT with regard to the amount of circulating blood volume of a neonate?

A. 30-40 cc/kg
B. 70-75 cc/kg
C. 50-60 cc/kg
D. 85-90 cc/kg

114. When comparing the adult and pediatric respiratory systems, which of the following is CORRECT with regard to the pediatric patient?

A. Children are mouth breathers
B. The diaphragm is the chief muscle of respiration
C. Intercostals & accessory muscles are strong
D. Pediatrics have smaller tongues

115. When administering medications via the ETT to neonates and pediatrics, which of the following is given at 2-3 times the usual dose?

A. Epinephrine
B. Atropine
C. Lidocaine
D. Narcan

116. You are preparing to perform RSI on a 6 year old child with multiple system trauma. Of the following medications used for RSI which has the CORRECT dosage listed:

A. Flumazenil 0.05-0.1 mg/kg IV/IO/IM
B. Etomidate 2-6 mg/kg IV/IO
C. Vecuronium 0.01-0.5 mg/kg IV/IO
D. Succinylcholine 1-4 mg/kg IV/IO

117. In a pediatric patient with a fever, the heart rate increases _____ BPM for every 1C above 37 C:

A. 5
B. 20
C. 10
D. 15

118. Which is an early sign of shock in a pediatric patient?

A. Prolonged capillary refill only
B. Bradycardia
C. Narrowed or decreased pulse pressure
D. Hypotension

119. Which antihypertensive medication is a classic choice for severe preeclampsia-associated hypertension?

A. Hydralazine
B. Labetalol
C. Magnesium sulfate
D. Nifedipine

120. Regarding third-trimester bleeding, which statement is correct?

A. Low-dose dopamine is used to preserve placental blood flow
B. Dobutamine dosing is 5-15 mg/kg/min
C. Hemodynamic compromise is common and must be anticipated
D. All of the above

121. Which statement is correct regarding preterm labor?

A. Magnesium sulfate is never recommended
B. It is defined as uterine contractions without cervical change
C. It occurs before 37 weeks of gestation
D. Terbutaline is routinely administered every 60 minutes until delivery

122. Treatment of a prolapsed umbilical cord includes the following:

A. Reinserting the cord in the vagina
B. Changing maternal position to knee-chest
C. Clamping and cutting the cord
D. Pulling on the cord to speed up delivery

123. Which finding differentiates preeclampsia from eclampsia?

A. Generalized tonic-clonic seizures
B. Hypertension
C. Anxiety
D. Photophobia

124. Which factors can cause fetal tachycardia?

I. Parasympatholytic drugs **II. Sympathomimetic drugs** **III. Chorioamnionitis**
IV. Maternal fever **V. Fetal hypoxia**

A. I, II, and V
B. II and IV
C. I and II
D. All of the above

125. A 25-year-old male is burned on the anterior left forearm (elbow to wrist), one half of the anterior chest, and the left side of the face. Using the adult Rule of Nines, which answer is the closest estimate of TBSA burned?

A. 30%
B. 18%
C. 25%
D. 20%

126. When transporting a patient with a circumferential burn of the extremity, the Critical Care Professional must be concerned with which of the following:

A. The need for an escharotomy
B. Compartment syndrome
C. The need for a fasciotomy
D. All of the above

127. Which of the following chemicals would produce the most serious burns?

A. An alkali solution
B. Acetic acid
C. Dry lye
D. Diesel fuel

128. Another method for measuring the percent of total body surface area burned is the:

A. Rule of the Palm
B. Parkland Formula
C. Injury Severity Scale
D. Ashford Formula

129. Burn severity is determined primarily by which factors?

I. Depth II. Age III. Flame color IV. TBSA

A. I, II, III, and V
B. I, II, and III
C. I, II, and IV
D. All of the above

130. Which patient most clearly meets a common criterion for transport to a burn center?

A. A partial-thickness burn of 10% BSA
B. Superficial burns over more than 50% BSA
C. Partial- and full-thickness burns involving more than 20% BSA
D. All of the above

Answer Key

1-26	27-52	53-78	79-104	105-130
1. B 2. D 3. B 4. D 5. D 6. A 7. D 8. A 9. D 10. D 11. C 12. A 13. C 14. B 15. B 16. D 17. C 18. D 19. D 20. C 21. D 22. D 23. C 24. A 25. C 26. B	27. A 28. B 29. D 30. B 31. D 32. A 33. D 34. C 35. B 36. D 37. C 38. D 39. D 40. D 41. D 42. A 43. D 44. A 45. A 46. B 47. B 48. C 49. A 50. A 51. D 52. C	53. C 54. D 55. A 56. A 57. B 58. B 59. D 60. B 61. B 62. D 63. B 64. C 65. D 66. A 67. D 68. B 69. D 70. C 71. D 72. B 73. B 74. B 75. B 76. D 77. A 78. B	79. C 80. D 81. D 82. C 83. D 84. D 85. C 86. D 87. A 88. B 89. B 90. B 91. C 92. D 93. D 94. C 95. A 96. A 97. D 98. D 99. D 100. B 101. B 102. D 103. A 104. C	105. C 106. A 107. D 108. B 109. B 110. C 111. B 112. A 113. D 114. B 115. A 116. D 117. C 118. C 119. A 120. C 121. C 122. B 123. A 124. D 125. D 126. D 127. C 128. A 129. C 130. C

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1. Answer B — A typical critical care transport configuration includes an RN and paramedic with a driver or pilot; the other combinations are nonstandard.

2. Answer D — CCT teams may manage RSI, invasive line monitoring, and emergency surgical airways when allowed by service policy and scope, so the best answer is all of the above.

3. Answer B — Fixed-wing transport is generally most efficient for longer interfacility distances such as about 110 miles when logistics allow.

4. Answer D — Liability risk is reduced by strong documentation and practicing to the applicable standard of care, not by avoiding high-risk patients.

5. Answer D — Sound diagnosis and treatment integrate history, physical examination, and current objective data.

6. Answer A — These CBC values are within normal adult reference ranges and do not explain the symptoms by themselves.

7. Answer D — PaO_2 and $PaCO_2$ are respiratory measurements, while HCO_3^- and base excess reflect the metabolic component of acid-base balance.

8. Answer A — A near-normal pH with both $PaCO_2$ and HCO_3^- abnormal in opposite directions is the pattern of compensation.

9. Answer D — Professional obligations include knowing policies, practicing competently within scope, and delivering reasonable and prudent care.

10. Answer D — Elevated liver enzymes classically suggest hepatocellular injury such as hepatitis.

11. Answer C — Hemoglobinuria means free hemoglobin is present in the urine rather than intact red cells.

12. Answer A — Guaiac testing is used to detect occult gastrointestinal bleeding.

13. Answer C — Lower colloid osmotic pressure promotes fluid movement out of the intravascular space and can contribute to shock.

14. Answer B — Beta-blockers can blunt tachycardia and other early compensatory findings, making compensated shock harder to recognize.

15. Answer B — An isolated forearm fracture in an otherwise healthy child is least likely to progress to multisystem organ failure.

16. Answer D — Cultures, CBC changes, and ABG abnormalities can all support a diagnosis of sepsis when interpreted in context.

17. Answer C — Leukocytes, lymphocytes, and antibodies are immune-system components; antigens are targets recognized by that system.

18. Answer D — Herpes zoster causes shingles.

19. Answer D — In a right-to-left shunt, some venous blood bypasses the lungs; the main problem is not failure of the lungs to oxygenate blood that reaches them.

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20. Answer C — PaO_2 primarily reflects oxygenation and gas exchange efficiency, not ventilation alone.

21. Answer D — ABGs evaluate oxygenation and acid-base status, but hemoglobin itself is not an ABG component.

22. Answer D — Tension pneumothorax occurs when air enters and becomes trapped in the pleural space, creating progressive pressure.

23. Answer C — The Angle of Louis helps locate the second intercostal space.

24. Answer A — An upright or semi-upright position generally optimizes ventilation and oxygenation after pleural fluid removal if the patient tolerates it.

25. Answer C — Pleural effusion, hemothorax, and pneumothorax are chest-tube indications; pulmonary embolus is not.

26. Answer B — Chest radiography is the standard confirmation method for chest tube position.

27. Answer A — Fowler's or semi-Fowler's generally promotes breathing and drainage during transport with a chest tube.

28. Answer B — Many older automatic transport ventilators offered primarily controlled ventilation modes; the other statements are inaccurate.

29. Answer D — Absent unilateral breath sounds with hypotension and tracheal deviation after positive-pressure ventilation should be treated as tension pneumothorax until proven otherwise.

30. Answer B — Demand valves can generate very high airway pressures and therefore increase barotrauma risk.

31. Answer D — Sterile technique is used with soft flexible suction catheters to reduce introduction of infection into the airway.

32. Answer A — RSI is designed for rapid, controlled airway management and aspiration prevention, not simply to visualize airway anatomy.

33. Answer D — Succinylcholine is not reversed by naloxone, it is a depolarizing paralytic, and agonal respirations alone are not the contraindication described here.

34. Answer C — Tracheostomy is used for long-term ventilation, aspiration protection, and dead-space reduction, not just because intubation is delayed.

35. Answer B — Good auscultation compares multiple fields, anterior and posterior, over at least a full breath cycle in each location.

36. Answer D — Early accidental decannulation or displacement can rapidly become fatal if the airway is lost.

37. Answer C — Needle cricothyrotomy is a temporizing airway; a more definitive airway is urgently required afterward.

38. Answer D — Inspiration depends on diaphragmatic contraction, not diaphragmatic relaxation.

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39. Answer D — Before a surgical airway, providers should attempt obstruction relief and standard airway maneuvers such as the Heimlich, intubation, or direct removal when appropriate.

40. Answer D — Retrograde intubation can be useful when oral intubation is contraindicated and may be considered as an alternative rescue technique; hyperflexion is not required.

41. Answer D — The guidewire must be long enough to travel from the puncture site to the mouth or nares; 70 cm is a typical minimum length.

42. Answer A — Non-tunneled central catheters are short-term lines that may be central or peripheral and may have one or more lumens; 'smaller bore' is not a defining feature.

43. Answer D — A wedged PA catheter estimates left-sided filling pressure, historically as a surrogate for LVEDP/left atrial pressure.

44. Answer A — If no waveform is present, do not flush first; check stopcocks, connections, and monitor setup before manipulating the catheter.

45. Answer A — An SVR of about 400 dyn·s/cm^5 is clearly pathologically low, consistent with distributive vasodilation.

46. Answer B — Zeroing references the transducer to atmospheric pressure.

47. Answer B — The formula (SBP + 2×DBP)/3 estimates mean arterial pressure.

48. Answer C — A transducer positioned above the phlebostatic axis and damping from clot or air can both artifactually lower displayed pressures.

49. Answer A — Autologous blood best minimizes infectious transmission and immunologic reaction risk.

50. Answer A — ABO and Rh are the primary blood-group systems that determine compatibility.

51. Answer D — Packed red blood cells restore oxygen-carrying capacity with less volume than whole blood, reducing overload risk.

52. Answer C — Independent verification of patient-blood compatibility is the key safety step before starting a transfusion.

53. Answer C — Delayed hemolytic reactions can appear days later and are classically recognized up to about two weeks after transfusion.

54. Answer D — Myocardium is the muscle layer, endocardium lines the chambers, epicardium is the outer layer, and endometrium is not cardiac tissue.

55. Answer A — Sympathetic fibers reach the heart through the cardiac plexus; the vagus slows the heart via acetylcholine.

56. Answer A — The resting electrical state is the resting membrane potential, not the action potential.

57. Answer B — aVR, aVL, and aVF are augmented unipolar limb leads.

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58. Answer B — Waveform shape is called morphology; the other statements misstate ECG intervals or axes.

59. Answer D — Inferior-wall MI changes in II, III, and aVF usually point to RCA involvement; other wall patterns often implicate the left coronary system.

60. Answer B — Routine 12-lead interpretation emphasizes ST segments, Q waves, and chamber enlargement rather than calculating P- and T-wave axes.

61. Answer B — Aberrant conduction is a supraventricular impulse conducted through the ventricles in a delayed, widened manner.

62. Answer D — A bifascicular pattern commonly combines a widened QRS/RBBB pattern with axis deviation rather than isolated inferior-lead negativity alone.

63. Answer B — Acute myocardial injury is classically reflected by ST-segment elevation.

64. Answer C — Many patients with ICDs can resume normal activity and travel with sensible precautions.

65. Answer D — Troubleshooting a pacemaker requires device settings, underlying rhythm, and lead type/position.

66. Answer A — Aortic valve insufficiency is a contraindication to IABP because balloon inflation worsens regurgitation.

67. Answer D — The IABP console displays ECG and arterial waveforms and uses an electronic trigger to time inflation and deflation.

68. Answer B – Inflation should occur immediately at the onset of diastole. The dicrotic notch represents closure of the aortic valve.

69. Answer D — Aortic aneurysm and severe peripheral vascular disease are classic contraindications to IABP placement.

70. Answer C — Correct IABP position is in the thoracic aorta distal to the left subclavian artery and above the renal arteries.

71. Answer D — Limb ischemia and gas embolism are important IABP complications.

72. Answer B — Accurate balloon timing requires a reliable arterial waveform or ECG trigger source.

73. Answer B — Haloperidol is commonly used for severe agitation or combativeness, not coma, chest pain, or depression.

74. Answer B — Benzodiazepines work by enhancing GABA-mediated inhibitory neurotransmission at the GABA-A receptor.

75. Answer B — Flumazenil is a benzodiazepine receptor antagonist used to reverse benzodiazepine effects in select patients.

76. Answer D — Morphine is an opioid agonist, often causes nausea/vomiting, and its effect lasts several hours; it is not a CNS stimulant.

77. Answer A — Vecuronium is a nondepolarizing paralytic commonly used to maintain paralysis after intubation.

78. Answer B — Albumin and dextran are colloid solutions.

79. Answer C — Dextran is a glucose polymer solution and can produce significant plasma volume expansion relative to the volume infused.

80. Answer D — Dobutamine is primarily an inotrope rather than a vasopressor.

81. Answer D — Dobutamine mainly increases contractility; marked peripheral vasoconstriction is not its primary effect.

82. Answer C — Typical nebulized albuterol dosing is higher than 0.25 mg, making that statement false.

83. Answer D — Anticholinergics bronchodilate by reducing cholinergic-mediated bronchoconstriction and generally have a slower onset than beta agonists.

84. Answer D — Metoprolol and esmolol are both Class II antiarrhythmics because they are beta-blockers.

85. Answer C — Amiodarone 300 mg IV/IO is the standard initial dose for refractory VF/pulseless VT in cardiac arrest.

86. Answer D — Beta-blockers are used for hypertension, can cause fatigue, lose selectivity at higher doses, and require caution in CHF.

87. Answer A — Both streptokinase and tPA work by converting plasminogen to plasmin; they do not share the same cost or half-life.

88. Answer B — Eight milligrams is 8000 mcg; divided by 250 mL, the concentration is 32 mcg/mL.

89. Answer B — 140 lb is about 63.6 kg, so 0.05 mcg/kg/min is about 3.2 mcg/min.

90. Answer B — At 32 mcg/mL, a dose of 3.2 mcg/min equals 0.1 mL/min, or about 6 mL/hr; 6.4 mL/hr is the closest option.

91. Answer C — Norepinephrine is predominantly an alpha-adrenergic vasoconstrictor with some beta-1 activity.

92. Answer D — 176 lb is about 80 kg; 10 mcg/kg/min equals 800 mcg/min, which is 1 mL/min with this mix, or 60 gtt/min on a 60 gtt/mL set.

93. Answer D — Massive hematemesis in a heavy alcohol user strongly suggests esophageal varices or gastric bleeding.

94. Answer C — Bowel sounds every 15-30 seconds can be normal; the other findings suggest abdominal pathology.

95. Answer A — A palpable abdominal aortic pulse can be normal in a thin supine patient.

96. Answer A — If NG placement cannot be confirmed, the tube should be removed or otherwise definitively re-verified before transport.

97. Answer D — Changing enteral administration sets every 24 hours helps reduce contamination-related GI complications.

98. Answer D — Foley catheters are used to drain urine, track urine output, and assess urine characteristics.

99. Answer D — Lack of urine may reflect misplacement, an empty bladder, or a clamp still being closed.

100. Answer B — Clear urine by itself is not a sign of catheter-associated infection.

101. Answer B — A colostomy is commonly performed for distal large-bowel or rectal pathology such as rectal cancer.

102. Answer D — Renal failure can alter acid-base balance, blood pressure, and hematocrit through anemia and volume regulation problems.

103. Answer A — Fistula or graft issues are hemodialysis concerns, not peritoneal dialysis complications.

104. Answer C — Excessive ultrafiltration is a common cause of dialysis-associated hypotension.

105. Answer C — Flexed upper extremities with extended lower extremities describe decorticate posturing.

106. Answer A — A 2+ deep tendon reflex is considered normal.

107. Answer D — The intracranial volume-pressure curve describes how ICP changes as intracranial volume changes.

108. Answer B — An intraventricular catheter is accurate and allows CSF drainage, but it does not have a lower infection risk than all other monitors.

109. Answer B — An ICP of 19 mmHg is mildly or slightly elevated rather than normal.

110. Answer C — Cerebral perfusion pressure equals mean arterial pressure minus intracranial pressure.

111. Answer B — This item reflects older teaching; historically ketamine and nitroprusside were taught as ICP concerns, while mannitol and oxygen are used to help lower ICP.

112. Answer A — Head and neck alignment promotes venous drainage and helps avoid unnecessary ICP elevation.

113. Answer D — Neonatal blood volume is roughly 85-90 mL/kg.

114. Answer B — The diaphragm is the chief muscle of respiration in infants and children.

115. Answer A — Among classic ET medications, epinephrine is given at a higher dose than IV dosing.

116. Answer D — Among the listed RSI doses, succinylcholine 1-4 mg/kg IV/IO is the best answer.

117. Answer C — A pediatric heart rate commonly rises by about 10 beats per minute for each 1°C increase in temperature.

118. Answer C — Early pediatric shock can narrow pulse pressure before hypotension develops.

119. Answer A — Hydralazine is a classic answer for severe preeclampsia-associated hypertension, although modern protocols may also use labetalol.

120. Answer C — Third-trimester bleeding can cause rapid maternal hemodynamic compromise and must be treated as high risk.

121. Answer C — Preterm labor refers to labor occurring before 37 weeks of gestation.

122. Answer B — Knee-chest or similar positioning helps reduce cord compression in prolapsed umbilical cord.

123. Answer A — Seizures distinguish eclampsia from preeclampsia.

124. Answer D — Drugs, infection, maternal fever, and fetal hypoxia can all contribute to fetal tachycardia.

125. Answer D — Using the adult Rule of Nines, the closest answer provided is 20%, though the original item is imperfect and should be interpreted cautiously.

126. Answer D — Circumferential extremity burns raise concern for vascular compromise, compartment syndrome, and possible escharotomy or fasciotomy.

127. Answer C — Dry lye is a strong alkali that can produce deep, severe burns.

128. Answer A — The Rule of the Palm is another accepted method for estimating burn surface area.

129. Answer C — Burn severity is driven by depth, age, and TBSA rather than flame color.

130. Answer C — Burn-center referral criteria include extensive partial-thickness or mixed-depth burns such as more than 20% BSA.

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