**Self Assessment – RSPT 1210: MODULE E**

1. The doctor suspects a shunt through the ductus arteriosus and asks you to draw a blood gas sample from the umbilical artery line to assess the infant's oxygenation. The UAC $PaO_2$ is 45 torr and the baby is on an $FiO_2$ of 50%. You would recommend:

   A. Mechanical ventilation
   B. Increasing the $FiO_2$ to 60%
   C. Requesting a preductal blood sample
   D. Giving an updraft tx with albuterol
   E. Recommend the baby be placed on CPAP/PEEP

2. You draw a capillary blood gas on a newborn with the following results:
   pH 7.23 $PaCO_2$ 77 mm Hg $PaO_2$ 40 mm Hg $HCO_3^-$ 30 mEq/L.
   The baby is currently in a oxyhood receiving 40% oxygen. You would recommend which of the following
   A. CPAP 40%
   B. Mechanical ventilation with PEEP 40%
   C. Oxygen therapy 50%
   D. Bronchodilator therapy

3. What is the most common method of administering CPAP to a baby? **NASAL CPAP**.

4. If you have a loss of pressure on the pressure manometer during CPAP administration, the most likely cause is
   A. **LEAK IN THE CIRCUIT.**
   B. **INSUFFICIENT FLOWRATE.**
   C. **MISPLACED NASAL PRONGS OR MASK NOT TIGHT.**
   D. **BABY IS CRYING (PACIFIER).**

5. The oxygen electrode used with the transcutaneous monitor is called the **CLARK** electrode.

6. The $CO_2$ electrode used with the transcutaneous monitor is called the **SEVERINGHAUS** electrode.

7. Transcutaneous monitors are heated to 43 to 44° C. If the perfusion beneath the sensor site decreases, the power needed to maintain the electrode temperature will
   A. Increase
   B. Decrease
   C. Not change

8. How often should transcutaneous monitor sites be changed? **2 TO 4 HOURS**

9. Which of the following equipment is needed to set up and maintain a CPAP system (Circle all that apply)
   A. Blender
   B. Humidifier
   C. Pressure manometer
   D. PEEP valve
   E. Low/Pressure manometer
   F. Water traps
   G. One way valves

10. If you are doing a heel stick capillary sample, where should the stick be made?
   A. Medial aspect of the heel
   B. Lateral aspect of the heel
   C. Posterior heal

11. CPAP/PEEP is often used to treat refractory hypoxemia caused from:
   I. Atelectasis
   II. True shunt
   III. Shunt effect
   IV. Deadspace
   V. Right to left cardiac shunt

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

15. CPAP is positive end expiratory pressure applied to a patient who is
   A. Spontaneously breathing
   B. Mechanically ventilated

16. A newborn is receiving CPAP therapy. Which of the following would not occur?
   A. Increased FRC
   B. Increased TLC
   C. Increased oxygenation
   D. Increased WOB

17. All the following are important for drawing an arterialized capillary blood sample (heel stick) **EXCEPT**:

   A. Use a warm-wet cloth at 45° C for 5-7 minutes prior to drawing sample
   B. Squeeze the heal to keep the blood flowing
   C. Use betadine/alcohol to clean the puncture site
   D. Puncture the site with a clean lancet no more than 2.5 mm in length

18. In a newborn, which drugs are used to treat the following?

   A. Apnea of prematurity **CAFFIENE**

   B. Respiratory Depression caused from narcotics **NARCAN**

19. You are monitoring a baby on a transcutaneous $O_2$ and $CO_2$ monitor. The $PtcO_2$ has been tracking 60 mm Hg all day. As you enter the room, the alarm is going off and you notice the $PtcO_2$ is reading 160 mm Hg. What is your assessment?
**THE SEAL OF THE SENSOR IS LEAKING AND THE SENSOR IS MONITORING ROOM AIR.**

20. Name two reasons for inserting an umbilical artery catheter (UAC).

A. **SAMPLING OF ARTERIAL BLOOD**
B. **MONITORING OF BLOOD PRESSURE**

21. Which of the following values obtained from a capillary gas correlate to the arterial blood gas? (Circle all that apply)
A. $PO_2$
B. $PCO_2$
C. pH

22. Which type of ECMO circuit supplies complete support for both the lungs and heart?
**VENO-ARTERIAL**

23. In a veno-venous ECMO circuit, where are the catheters placed?
**CATHETERS ARE INSERTED INTO THE INTERNAL JUGULAR VEIN AND FEMORAL VEIN OR DOUBLE LUMEN TUBE IS PLACED IN THE RIGHT ATRIUM VIA THE RIGHT INTERNAL JUGULAR VEIN.**

24. In a veno-arterial ECMO circuit, where are the catheters placed?
**CATHETERS INSERTED INTO RIGHT INTERNAL JUGULAR VEIN AND RIGHT COMMON CAROTID ARTERY OR FEMORAL ARTERY.**

25. Write the formula for calculating the oxygen index
**OI = $\frac{MAP \times FiO_2 \times 100}{PaO_2}$**

26. What is the definition for mean airway pressure (MAP). **THE AVERAGE PRESSURE APPLIED DURING THE RESPIRATORY CYCLE.**

27. An oxygen index greater than **40** indicates a 80% mortality rate and is an indication for ECMO.

28. List the indications for ECMO therapy
**MECONIUM ASPIRATION**
**RDS**
**CONGENITAL DIAPHRAGMATIC HERNIAS**
**PFC**
**SEVERE PNEUMONIAS/SEPSIS**
**POST-OP CARDIAC SURGERY**
**BRONCHOPLEURAL FISTULAS (PULMONARY AIR LEAK)**

29. What is the concentration of nitric oxide used to treat PPHN?
**START AT 5 – 20 PARTS/MILLION (PPM) BUT MAY GO AS HIGH AS 80 PPM**

30. A high frequency ventilator is classified as a High Frequency Jet Ventilator if can deliver more than **150 to 600** breaths/min.

31. Name the three types of high frequency ventilation.

    A. **HFPPV**
    B. **HFJV**
    C. **HFO**

32. What should be monitored during NO administration? **THE METHEMOGLOBIN LEVEL**

33. Differentiate between PEEP and CPAP.
    **CPAP IS PEEP APPLIED TO A SPONTANEOUS BREATHING PATIENT.**