J.T., 74-year-old Hispanic male, came to the emergency department (ED) 7 days ago with complaints of shortness of breath. His wife stated that he has a history of hypertension, depression, and chronic obstructive pulmonary disease (COPD). The admission chest x ray revealed dense consolidation of the left lower lobe. An arterial blood gas (ABG) at that time showed ph 7.60, Paco2 29, HCO3 32 , and Pao2 75. He quickly deteriorated and required intubation. He has been in the intensive care unit for 3 days. JT has been married to his wife for 45 years and they live with a daughter and 2 grandchildren. JT and his wife speak English and Spanish. JT weighs 75kg

Current Assessment and tests:

BP 167/98, pulse 112, temp 102.3F, RR 144, O2 sat 72%

Patient localizes to ETT and is intermittently opens eyes, making several attempts to pull ETT

Orally intubated with # 7.5 ETT, taped at 27 cm at teeth

Ventilator settings: Assist control (AC), Tidal volume (TV) 450, Rate 14, Fio2 60%, Peep 5 cm H2O

Breath sounds: decreased bases and bilateral crackles that do not clear after suctioning

Brown, yellow secretions returned with suctioning

Peripheral pulses weak with capillary refill greater than 4 seconds

2+ pitting edema in the bilateral lower extremities

ABG ph 7.31, Paco2 58, Hco 28 , Pao2 54

Chest X-ray reveals diffuse white- out in middle and lower lobes; ETT present with tip above carina; left subclavian central venous catheter is located in the superior vena cava

1. Interpret JT's latest ABG's respiratory acidosis with partial compensation

2. Describe each of JT's ventilator settings and the rational for the selection of each

3. After JT's ABG results the provider increases the PEEP from 5 cmH2O to 8cm H2O. Why would this be necessary and what is the expected outcome with this action?to increase pa02, get more perfusion and circulation and reduce cardiac output

4. Based on the assessment data, what are the nursing priorities for JT?

5. What measures should be part of JT's care to prevent complications? Suctioning and oral care

6. What safety measures should you implement to protect JT while he is mechanically ventilated? Restraint from pulling the tubes. Assessment to avoid skin breakdown

7. List 3 potential complications with mechanical ventilation. Oxygen toxicity, infection and dvt

8. List 3 benefits of using IV sedation and analgesic medications while JT is on mechanical ventilation.

9. What would be signs JT is ready for weaning and possible extubation? Spontaneous breathing

10. An hour after extubation, JT shows signs that he is not tolerating being off of the ventilator. What would be some of these signs? Resume ventilation.