

Medical Equipment (2) – Sheet #2

Part I. Complete the following sentences:

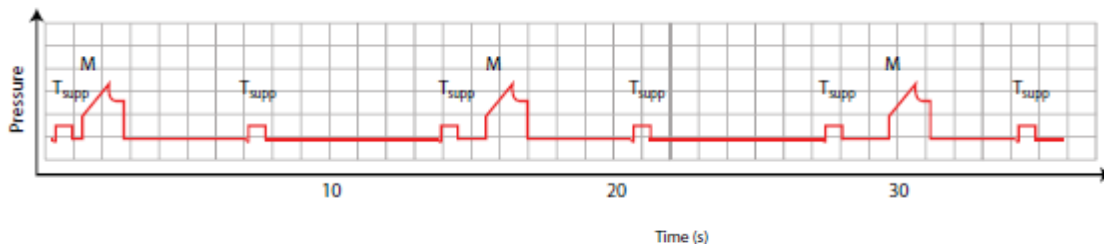
1. Lower Oxygen solubility in alveolar wall results in ... efficiency of gas exchange.
2. Triggered or supported breathing can be ... with mandatory breathing.
3. Limit variable is one that can reach and maintain a preset value before ... ends.
4. To allow a patient to eat and drink while on a ventilator, Oxygen is administered using ...
5. CPAP increases lung compliance by increasing ... at the same
6. To provide an air/oxygen mixture with a specific Oxygen concentration, we use ... mechanism.
7. ... is most practical baseline variable and used in all modern ventilators.
8. Surface tension within an alveolus is ... to the surface area of this alveolus.
9. Compliance of alveoli is ... than that of proximal airways.

Part II. Mark the following statements as True (T) or False (F):

10. Some Ventilators can work using a compressed air as energy source.
11. Mandatory breathing mode in NIV is triggered by spontaneous breathing.
12. By the end of the contact time, Oxygen partial pressure in capillary blood and alveolar gas is same.
13. The hysteresis in the pressure-volume curve of respiration represents the work done by the alveoli.
14. Expiratory cycling can be done using time or spontaneous breathing.
15. Spontaneous breathing is always allowed with CPAP treatment.
16. NIV uses a single limb for taking fresh gas to the patient.
17. Some Ventilators can work using a compressed air as energy source.
18. The hysteresis in the pressure-volume curve of respiration represents the work done by the alveoli.
19. Expiratory cycling can be done using time or spontaneous breathing.
20. Spontaneous breathing is always allowed with CPAP treatment.
21. Cycle variable is one that is measured and used to end inspiration.
22. While running at sea level, alveolar diffusion time is same while contact time is shorter.
23. High lung compliance means that the lung expands easily.
24. Surface tension inside alveoli depends on their surface area.
25. Source of power to mechanical ventilators can be either electricity or compressed air.

Part III. Answer these questions by marking the best answer from the choices given:

26. In CPAP, the mode of breathing is ...
- Spontaneous breathing
 - Mandatory breathing
 - Triggered breathing
27. The parameter that is controlled during expiration is called ...
- Baseline variable
 - Trigger variable
 - Limit variable
28. Venturi device is used in ...
- Nasal cannulae
 - Variable performance mask
 - Fixed performance mask
29. At higher altitudes, contact time is ... in normal altitudes at rest.
- Shorter than
 - Longer than
 - Same as
30. The following pressure-volume relationship describes ... breathing mode.



- Mandatory + Triggered
- Synchronized + supported
- Spontaneous + Mandatory

Part IV. Answer the following questions:

31. Assuming spontaneous breathing happens at a rate of 10 breaths/min. Draw a diagram showing the pressure vs. time for the following cases:
- Spontaneous breathing
 - Mandatory breathing at a rate of 15 breaths/min
 - Triggered breathing
 - Synchronized Mandatory breathing at a rate of 5 breaths/min + Triggered breathing