

Medical Equipment (2) – Midterm Exam

Part I. Mark the following statements as True (T) or False (F): (4 Points Each)

1. Integrity of the blood circuit in hemodialysis is monitored by blood pressure sensors. (T)
2. Bypass valve is usually activated to bypass dialyzer during conductivity alarm conditions. (T)
3. Ultrasonic air-foam detectors are more widely used in new dialysis machines. (T)
4. Modern hemodialysis systems with new safety features still require human monitoring of operation. (T)
5. Blood pump need not be disinfected in between patients. (T)
6. When there is a dialysate temperature alarm, blood circuit must stop. (T)
7. Expiratory cycling can be done using time or spontaneous breathing. (F)
8. Spontaneous breathing is always supported with mandatory NIV. (F)
9. Limit variable is one that is measured and used to end respiration cycle. (F)
10. Low lung compliance means that the lung expands easily. (F)
11. The pressure inside smaller alveoli is larger than the pressure inside larger alveoli. (F)
12. Exactly when phase transition occurs in NIV can be determined by the ventilator or the patient. (T)

Part II. Answer these questions by marking the best answer from the choices given: (5 points each)

13. Blood pump is stopped in the condition when ...
 - a. High blood pressure was detected
 - b. High blood conductivity was detected
 - c. High blood temperature was detected
14. Heparin pump is used in the blood circuit to ...
 - a. Prevent air bubbles from forming in the blood
 - b. Prevent cooling of the dialysate
 - c. Prevent coagulation of blood in the extracorporeal circuit
15. Ultrafiltration rate measurement systems can be designed based on ...
 - a. Flow sensing
 - b. Conductivity monitoring
 - c. Pressure sensing
16. When there is a break in the dialyzer, ... happens.
 - a. Blood leaks from blood circuit to dialysate circuit
 - b. Dialysate leaks from dialysate circuit to blood circuit
 - c. Mixing of blood and dialysate happens in both circuits
17. Correct amount mixing of dialysate components is checked using ...measurements.
 - a. Temperature
 - b. concentration
 - c. Conductivity

18. Water is removed from the patient's blood in hemodialysis using a process called...
 - a. Diffusion
 - b. Ultrafiltration
 - c. Dialysis
19. Detection of wrong input dialysate concentrates in hemodialysis can be done using ...
 - a. Conductivity monitoring
 - b. Blood
 - c. Monitoring of speed of mixing pumps
20. For patients with no ability to exert respiratory effort, the preferred mode of breathing is ...
 - a. Spontaneous breathing
 - b. Mandatory breathing
 - c. Triggered breathing
21. The parameter that is controlled during inspiration is called ...
 - a. Baseline variable
 - b. Trigger variable
 - c. Limit variable
22. At higher altitudes while running, contact time is ... in normal altitudes at rest.
 - a. Shorter than
 - b. Longer than
 - c. Same as
23. Higher Oxygen solubility in alveolar wall results in ... efficiency of gas exchange.
 - a. Decreased
 - b. Increased
 - c. Same
24. The following pressure-volume relationship describes ... breathing mode.
 - a. Mandatory + Triggered
 - b. Synchronized + supported
 - c. Spontaneous + Mandatory

