***In vitro* experiment on animal heart using Langendorff apparatus**

**(Pre- and post-test)**

1. With which equipment, heart reservoir is connected with 3/8” tubing?
2. Blood reservoir
3. Heater/oxygenator
4. Centrifugal pump
5. Hemostatic valve
6. Why washing of blood with normal is recommended before using in this experiment?
7. To remove excess electrolyte
8. To remove lysed cellular materials
9. To remove red blood cell
10. All the above
11. Which of the following hematocrit concentration is recommended for using in Langendorff apparatus?
12. 20-25%
13. 30-35%
14. 40-45%
15. 50-55%
16. What should be the initial calcium ion concentration in the blood during experiment with Langendorff apparatus?
17. 0.3-0.5 mmol/L
18. 0.5-0.7 mmol/L
19. 0.7-0.9 mmol/L
20. 0.9-0.11 mmol/L
21. What parameters do you need to check during this experiment?
    1. Blood pH
    2. Blood electrolyte concentration
    3. Temperature
    4. Clotting factor
22. How often do you have to take blood sample to check physiologic parameter?
    1. Every 5 minute interval
    2. Every 10 minute interval
    3. Every 15 minute interval
    4. Every 20 minute interval
23. What amount of ionic calcium do you have to add frequently in the blood during the experiment?
    1. 1 mmol
    2. 2 mmol
    3. 3 mmol
    4. 4 mmol
24. How will you insert the pressure transducer?
    1. Through hemostasis valve into the aorta
    2. Through hemostasis valve into the atrium
    3. Through hemostasis valve into the ventricle
    4. Through hemostasis valve into the septum
25. Temperature of warming unit should be increased until intramyocardial temperature is measured at 37⁰ C. T/F
26. Pressure-volume conductance catheter is inserted in to the left ventricle through apical incision. T/F