

MULTIPLE CHOICE

HEMODYNAMICS - PRACTICE SET

PROPOSED FOR REVIEW - questions are the author's verbatim Q&A; distractors are auto-selected from other answers in the same bank and must be checked by a subject-matter reviewer (a distractor could coincidentally be correct). Not authoritative assessment content.

1. What are the two forms of laminar flow?

- A. Eddy and vortex flow
- B. Frictional and inertial flow
- C. Pulsatile and phasic flow
- D. Plug and parabolic flow

2. What muscle is responsible for breathing?

- A. Intercostal artery
- B. Diaphragm
- C. Aortic valve
- D. Carotid sinus

3. What type of flow occurs when blood moves at a variable velocity and is commonly seen in arterial circulation?

- A. Pulsatile flow
- B. Steady flow
- C. Plug flow
- D. Phasic flow

4. How much kinetic energy do heavy objects moving quickly have?

- A. No kinetic energy
- B. A lot of kinetic energy
- C. Only gravitational energy
- D. A little kinetic energy

5. What type of flow occurs when layers of blood travel at individual speeds?

- A. Laminar flow
- B. Stagnant flow
- C. Aliased flow
- D. Turbulent flow

6. What term is used for pressure related to the weight of blood pressing on a vessel wall?

- A. Stagnation pressure
- B. Dynamic pressure
- C. Transmural pressure
- D. Hydrostatic pressure

7. Does resistance have the same name in an electrical system and a fluid system?

- A. No
- B. Yes

8. When transmural pressure is low, how filled are veins?

- A. Collapsed with no lumen
- B. Completely filled
- C. Partially filled
- D. Overdistended

9. During expiration, does venous flow in the legs increase or decrease?

- A. Decrease

- B. Increase
- C. Remain unchanged
- D. Reverse direction

10. When does inertial energy loss occur?

- A. Pulsatile flow, phasic flow, and velocity changes
- B. Only during scan conversion
- C. Only steady flow at constant velocity
- D. Only when viscosity becomes zero

11. What is Reynolds number for turbulent flow?

- A. Less than 1,500
- B. Greater than 2,300
- C. Exactly 1
- D. Between 10 and 100

12. What type of flow occurs when a fluid moves at a constant velocity?

- A. Phasic flow
- B. Pulsatile flow
- C. Steady flow
- D. Turbulent flow

13. What is the shape of a vein if the transmural pressure is high?

- A. Dumbbell shaped
- B. Round
- C. Collapsed
- D. Flat and slitlike

14. What are the units for flow?

- A. Any volume divided by time, such as liters/min
- B. Any distance divided by time, such as cm/s
- C. Any frequency divided by time, such as Hz/s
- D. Any pressure divided by area, such as mmHg/cm²

15. What term is used to describe the narrowing of the lumen in a vessel?

- A. Thrill
- B. Hematocrit
- C. Aneurysm
- D. Stenosis

16. In the electrical analogy, pressure in a fluid system is called what?

- A. Voltage in an electrical system
- B. Power in an electrical system
- C. Resistance in an electrical system
- D. Current in an electrical system

17. What is the study of blood moving within the circulatory system?

- A. Sonolucency
- B. Hemodynamics
- C. Hydrostatics
- D. Hemostasis

18. During expiration, does flow in the vena cava increase or decrease?

- A. Remain unchanged
- B. Increase
- C. Decrease
- D. Become pulsatile only

19. Compared with a smaller object moving at the same speed, how much kinetic energy does an object with greater mass have?

- A. Less kinetic energy
- B. More kinetic energy
- C. The same kinetic energy

D. No kinetic energy

20. What are the forms of energy associated with blood?

- A. Plug, parabolic, and turbulent energy
- B. Pressure, kinetic, and gravitational energy
- C. Viscous, frictional, and inertial energy
- D. Thermal, acoustic, and optical energy

21. What type of flow is seen in venous circulation when someone stops breathing for a few seconds?

- A. Phasic flow
- B. Pulsatile flow
- C. Post-stenotic flow
- D. Steady flow

22. What describes the thickness of fluid?

- A. Viscosity
- B. Velocity
- C. Hematocrit
- D. Pressure gradient

23. During inspiration, does flow in the vena cava increase or decrease?

- A. Increase
- B. Become turbulent only
- C. Decrease
- D. Remain unchanged

24. What indicates the volume of blood during a particular time?

- A. Resistance
- B. Pressure energy
- C. Velocity
- D. Flow or volume flow rate

25. When a patient is standing, where is hydrostatic pressure positive?

- A. At the level of the heart
- B. Locations below the heart
- C. At the head
- D. Locations above the heart