Mix and Flow of Matter Topic ¾ Test Review

Define the following terms

Pressure

Valve

Pump

Surfactant

Viscosity

Plimsoll line

Density

Units for density

Neutral buoyancy

Pipeline pig

4. What properties affect or change the density of a substance? Explain each with the particle model of matter.

5. Describe the difference between a hydraulic system and a pneumatic system. Give an example of each.

8. Using the particle model of matter, explain the difference in the compressibility of gases and liquids. What can compress the most? What can compress the least? Why?

9. What is *the bends* and how does someone get it?

10. What does Pascal's law state?

11. How does a submarine work? (3 stages)

12. How does temperature affect viscosity?

13. What is the pressure exerted on the inside of a can if the surface area of the can is 0.2 m2 and the force is 10 N?

14. Find the area, in square centimetres, of a high heel where an 800N force is applied with a pressure of 200 Newtons per square centimeter.

15. Find the force a car crusher exerts at a pressure of 35000 N/m^2 over an area of $75m^2$

16. Calculate the density of 85.00 grams of mercury with a volume of 6.27 mL

17. Calculate the mass of 1.85 L of gasoline, with a density of 0.75 grams per millilitre

18. Calculate the volume of 650 grams of solid silver, with a density of 10.49 grams per cubic centimeter

19. Why is hot water less dense than cold water?

20. Complete the following chart, then rank each from least dense to most dense:

Substance	Mass (g)	Volume (mL)	Density
vegetable oil	92	100	
iron	39	5	
gold	326	20	

Least Dense _____ _____ _____ Most Dense

21. Use the particle model of matter to explain how a hydraulic pump can transmit force from one place to another. Why would a hydraulic pump be a better choice than an air pump?

22. On the coast of British Columbia, a fishing boat loaded with fish sank when it entered the Fraser River from the Strait of Georgia. The strait is part of the Pacific Ocean. Why do you think this happened?

23. How can a 2000 kg vehicle be easily lifted?

24. List two types of water pumps and explain how they move water