Chapte 6

Work sheet fo grade 9

1. If an object is rising up through water, which one of the following relation between buoyant force of water and weight of the object is correct

A. Buoyant force > weight C. Buoyant force = weight

B. Buoyant force < weight D. they do not have any relation

2. At what depth of a sea water of density 1000kgm-3 would the pressure be 4.01x105 Pa? (patm=1.01x105 Pa, g=10m/s2)

A. 20m B. 40m C. 30m D. 50m

3. A floating wooden block has a volume of 0.4m3 and displaces 0.3m3 of water. What is the relative density of the block?

A. 1 B. 0.5 C. 0.75 D. 0.85

4. A solid cube of material is 20cm on each side. If its floats in one oil density 850kg/m3 with 2/3 of the block out of oil. What is density of the solid cube of material?

A. 450kg/m^3 B. 283.3kg/m^3 C. 566.6kg/m^3 D. 1000kg/m

5. In a hydraulic press a force of 24N is applied to a smaller piston of area 0.4m2. What load will be supported by the larger piston whose area is 0.7m2?

A. 42N B. 24N C. 48N D. 84N

6. Which one of the following is the unit of pressure?

A. mmHg B. Pascal C. Nm^2 D. 1atm

7. Pressure in a liquid at rest doesn't depend on:

A. Depth C. acceleration due to gravity

B. Density of liquid D. shape of container

8. What pressure is exerted by the water at the bottom of a sea whose depth is 100m (use density of sea water =1030kg/m3& g =10m/s2)

A. $1.03x10^6$pa B. $2.03x10^6$pa C. $3.06x10^6$pa D. $4.08x10^6$pa

9 body that weight 40N in air is found to be weight 32N when immersed in water what buoyant force of water?

A. 72N B. 40N C. 30N D. 8N

10. What is the buoyant force on 5kg solid object has a density of $2x10^4$kg/m3 when immersed in fluid having a density of $5x10^3kg/m^3$

A. 12.5N B. 20N C. 24.5 D. 40

11. Which one of the following are not the properties of pressure of the liquid at rest?

A. It independent on the shape of the contener B. It depend of the mass of the liquid above the surface

C. It increase as depth increase D. It depends on the acceleration of gravity.

12. " when a body is immersed either totally or partially in a fluid, it experiences a buoyant force equal to the weight of the fluid displaced " this principle is:

A. Pascal's principle C. Bernoulli's principle

B. Archimedes' principle D. Continuity principle

13. Which one of the following does the buoyant force depend on?

A. The volume of the object C. The density of the fluid

B. The density of the object D. A and C are correct

14 . A container holds water of density 1000kg/m3. Taking the gravitational acceleration as 10m/s2, the pressure at a depth of 100 mm is:

A. 1kPa B. 1MPa C. 100Pa D. 1Pa

15. If the absolute pressure at the bottom of a freshwater pond is 2.313x105Pa, what will be the depth of the pond?

A. 33m B. 23.13m C. 13m D.10.13m

16. A plastic cube having a side of length 10cm floats on freshwater. If the volume of the cube that's submerged in water is 60 percent of its total volume. What is the density of the cube? (ρwater = 1000kg/m3)

A. 1000kg/m^3 B. 800kg/m^3 C. 700kg/m^3 D. 600kg/m^3

17. A very large tank is full of oil whose density is 800kg/m3. If the absolute pressure at bottom of the tank is 1.81x105pa, then what is the depth of the oil? (take that atmospheric pressure is 1.01x105pa)

A. 100m B. 75m C. 10m D. 9.5m

18. If you feel a pressure three times that of atmospheric pressure when you are deep under water. How high is the water level from your position? (1atm = 1x10^5Pa,& ρ_w = 1000kg/m^3)

A. 10m B. 20m C. 30m D. 40m

19. The gauge pressure of fluid in a pipe is 70kPa and the atmospheric pressure is 100kPa. The absolute pressure of the fluid in the pipe is:

A. 7 MPa B. 30 kPa C. 170kPa D. 10/7kPa

20. A certain objects float in the three fluids F1, F2 and F3 of densities 0.9ρ, ρ and 1.2ρ respectively. The volume of the displaced fluid by the object is

A. Least F_1 B. Least F_3 C. Least F_2 D. greatest for F_2

21. An object weight is 4N in air and has a density of 8g/cm3 when totally immersed in the water what will be the apparent weight?

A. 1N B. 2N C. 3N D. 4N

22. A book rest on a table which it's face having a sides 30cm by 25cm. if it exerts a pressure of 200Pa then determine the mass of the block.

A. 3kg B. 2.5kg C. 2kg D. 1.5kg

23. An open tank filled with water to depth of 3m. What is the absolute pressure at the point 1.2m below the upper surface of water? (take Patm =1.01x105Pa)

A. 1. 22x10^{5}pa B. 1.13x10^{5}Pa C. 2.11x10^{5}Pa D. 2.13x10^{5}Pa

24. The relative density of a substance is defined as the

A. product of the density of water and the density of a substance

B. difference between the density of a substance and the density of water

C. ratio of the density of a substance to the density of water

D Ratio of the density of a water to the density of substance.

25. Atmospheric pressure increases as

A. Altitude decreases. *C. air temperature increases*

B. Air density decreases. *D. latitude decreases*

26. As the temperature increases air pressure_____

A. Increases B. decreases C. stay the same D. doesn't change

27. An object weight 40N in air and has a density of 10g/cm3. When totally immersed in water then what will be the apparent?

A. 20N B. 30N C. 36N D. 40N

28. A solid of cube of material is 10cm on each edge. If it's floats in an oil of density 900kg/m3 with one - third of the block is out of oil. What is the density of the materials?

A. 300kg/m^3 B. 600kg/m^3 C. 900kg/m^3 D. 1200kg/m^3

29. Which one of the following is the property of sound wave that is related to frequency?

A. Loudness B. Intensity C. Pitch D. Timber

30. Which physical quantity increase as sound travel from air to water?

A. Frequency B. Period C. Seed D. Wavelength

31. A ray of light enters from air to a glass medium whose index of refraction is 3/2. If the angle of incidence is 30, what is the sin of the angle of refraction? (use sin 30=0.5,cos 30=0.86)

A. 3/2 B. 1/3 C. 3/4 D. 4/3

32. In what temperature will the speed of sound in air be 348m/s? (use v= 330m/s)

A. 30℃ B. 50℃ C. 70℃ D. 90℃

33. An electromagnetic wave propagates in vacuum at speed v & wave length λ as the wave enter some unknown medium its speed decreases to 0.6v. What is the wavelength of unknown medium

A. 0.4λ B. 0.5λ C. 0.6λ D. 0.7λ

34. In high air pressure the molecules are_____

A. Warm and moving slow C. far apart and moving fast

B. Cloth together and moving slow D. hot and moving rapidly

35. Rectangular box measures 10mx5mx20m and its weight is 800N. The least pressure it can exert when it rests on a flat surface is:

A. 4N B. 16Pa C. 8Pa D. 2Pa