

19. What is the density of oxygen gas (in g dm<sup>-3</sup>) at 25°C and 0.987 atm?

- A. 0.65                      C. 1.34  
B. 1.29                      D. 13.4

20. A glass bulb contains 4.0 g of a gas at pressure of 100 kPa. If the pressure in the bulb is lowered to 0.1 kPa by removing gas from it, what is the number of molecules that will be left in the bulb? (molar mass of gas = 40)

- A.  $6 \times 10^{18}$                       C.  $6 \times 10^{20}$   
B.  $6 \times 10^{19}$                       D.  $3 \times 10^{20}$

21. A 250 mL sample of oxygen is collected over water at 25°C and 760.0 torr pressure. What is the pressure of the dry gas alone? (Vapor pressure of water at 25°C = 23.8 torr)

- A. 783.8 torr                      C. 205.38 torr  
B. 1250 torr                      D. 736.2 torr

22. If liquid J has a stronger attractive force than that of liquids K and L, choose the **TRUE** statement for liquids J, K and L.

- A. The vapor pressure of J is the lowest and thus, the boiling point of J is the highest.  
B. The vapor pressure of J is the lowest and thus, the boiling point of J is the lowest.  
C. The vapor pressure of L is the highest and thus, the boiling point of L is the highest.  
D. Liquid J is the most volatile and thus, the boiling point of J is the lowest.

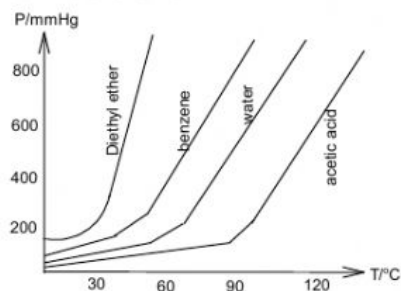
23. The vapour pressure of a liquid depends on all the following factors **EXCEPT**

- A. temperature  
B. the volume of the liquid

C. the molecular size of liquid

D. the relative molecular mass of liquid

24. The graph of vapour pressure against temperature for four types of liquids is shown as follows:



Of the following statements, which is **TRUE** about liquids on the above figure?

- A. Acetic acid is the most volatile.  
B. Water has the highest boiling point.  
C. Only diethyl ether and benzene boil at 1 atm.  
D. The attractive forces between benzene molecules are stronger compare to diethyl ether.

25. The vapor pressure of a liquid decreases if

- A. the liquid is transferred to a smaller vessel.  
B. the volume of liquid is reduced.  
C. the volume of vapor state is declined  
D. the temperature is lowered.

26. The normal boiling point of a liquid is the temperature at which

- A. the boiling point of the liquid equal to 100°C  
B. its vapour pressure is equal to 760 mmHg