

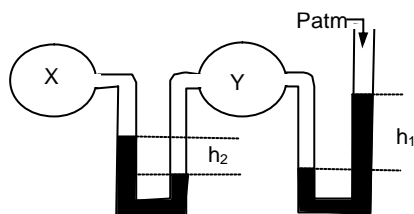
# GASES

TEST \_\_\_\_\_

## Gases General

Date: \_\_\_\_\_

1. In the system given in figure below, what is the pressure of X and Y gases in cm Hg? ( $h_1$ : 20 cm Hg) ( $h_2$ : 15 mm Hg) ( $P_{atm}$ : 75 cm Hg)?



- A) X= 75, Y= 35    B) X= 60, Y= 40    C) X= 20, Y= 15  
D) X= 55, Y= 40    E) X= 95, Y= 80

2. A plastic bag has a mass of 0.32 g when filled with  $Y_2$  gas. The same bag, when filled with gas X, weighs 0.80 g. What is the ratio between the mass of one molecule of gas X to one molecule of  $Y_2$  gas, if the measurements are taken at the same conditions? (Mass of plastic bag is negligible)

- A) 5    B) 5/2    C) 2/5    D) 1    E) 1/5

3. 224 ml of a gas Y, at STP, weighed 0.28 g. The Y gas can be; (C:12, O:16, N:14, H:1)

I -  $CO_2$     II -  $N_2$     III -  $C_2H_6$ .

- A) I-II-III    B) I    C) I-II    D) II-III    E) III

4. How many molecules are contained in a molar volume of a gas at 200 °C and 20 atm pressure?

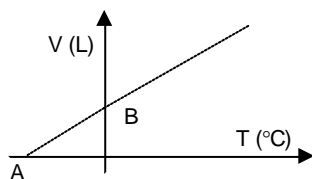
- A)  $(1/20) \times (273/473) \times 6.02 \times 10^{23}$   
B)  $20 \times (273/473) \times 6.02 \times 10^{23}$   
C)  $(273/473) \times 6.02 \times 10^{23}$   
D)  $20 \times 6.02 \times 10^{23}$   
E)  $6.02 \times 10^{23}$

5. P-V of 11 g of X gas at 273 K is 5.6 Liter-atm. What is the type of this gas? (C:12 S:32 O:16 N:14)

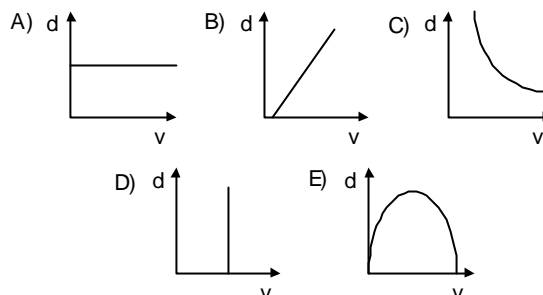
- A) CO    B)  $CO_2$     C)  $NO_2$     D)  $N_2O_3$     E)  $SO_2$

6. Given graph belongs to 0.5 mole of an ideal gas. What do A and B points represent?

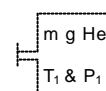
- | A       | B    |
|---------|------|
| A) 273  | 22.4 |
| B) 273  | 11.2 |
| C) -273 | 11.2 |
| D) -273 | 22.4 |
| E) -546 | 11.2 |



7. Which graph shows the volume – density relation of sample gas in container and as the temperature increases the pressure remains constant?

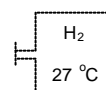


8. 2m gram of  $H_2$  is added into close cylinder then absolute temperature is decreased by half; what do you expect final pressure?



- A)  $P_1$     B)  $2P_1$     C)  $5/2P_1$     D)  $3P_1$     E)  $5/4P_1$

9. At a constant volume; half amount of  $H_2$  has been taken from the container. In order to keep the pressure constant; what should be final temperature in °C?

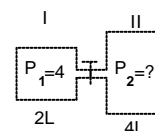


- A) 27    B) 127    C) 300    D) 327    E) 600

10.  $N_2O_{4(g)} \rightleftharpoons 2NO_{2(g)}$  In a closed container; when the %50 of  $N_2O_4$  is decomposed and absolute temperature is increased by two times what will be final pressure?

- A) 2P    B) 1.5P    C) 3P    D) P/2    E) P

11. When the tap is opened final pressure becomes 3 atm. What is the pressure of 2<sup>nd</sup> container initially?



- A) 1    B) 2    C) 2.5    D) 3    E) 0.5

12.  $CH_4$  gas diffuses twice as rapidly as an unknown gas, under the same conditions. Which one of the below can be the unknown gas? (N:14, O:16, He:4, S:32)

- A)  $NO_2$     B) He    C)  $O_2$     D)  $N_2$     E)  $SO_2$