

In victor meyer method a volatile liquid is converted into vapour which displaces air. The volume of air displaced is measured at known values of pressure & temperature. The number of mols of volatile liquid can be calculated. A student has performed experiment and obtained following data :

Substance	Mass of substance vapourised	Volume of air displaced	Pressure	Temp.	Aq. Tension
X	0.2	82.1 ml	778	27°C	18 mm
Y	0.2	41.05 ml	773	17°C	13mm
Z	a	v ml	P°	8 TK	P

**Q.1** What is the molecular mass of substance 'X'

- (A) 60 (B) 30  
(C) 6000 (D) None of these

**Q.2** What is molecular mass of substance Z :

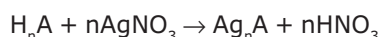
- (A)  $\frac{a \times (p^0 - p)}{v \times 0.0821 \times T}$  (B)  $\frac{a \times 0.0821 \times T}{(p^0 - p) \times v}$   
(C)  $\frac{a \times 0.0821 \times 7.6 \times 10^5}{(p^0 - p) \times v}$  (D) None of these

**Q.3** If Y compound has 50% non volatile impurities. What is the molecular mass ?

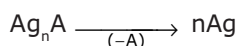
- (A) 29 (B) 58  
(C) 116 (D) None of these

A student has designed a method to determine molecular mass of acids. He used following steps:

(1) He reacted known mass of acid with  $\text{AgNO}_3$  as per the following general equation



(2) Then he quantitatively reduced silver salts to pure silver



(3) After weighing the mass of silver obtained he converted mass into moles of reduced silver.

(4) Using mol calculations he calculated molecular mass of acid.

Atomic weight of Ag is 108.

**Q.4** If student used wg  $\text{H}_n\text{A}$  acid and at end he obtained X g of silver metal what is molecular mass of  $\text{H}_n\text{A}$

(A)  $\frac{X}{108} \times \frac{w}{n}$  (B)  $\frac{w \times n \times 108}{X}$

(C)  $\frac{w \times n}{108 \times X}$  (D) None of these

**Q.5** If 10.0g of a diprotic organic acid has resulted 10.8 g of pure silver metal at the end step of experiment. What is the molar mass of organic acid-

- (A) 200 (B) 100  
(C) 50 (D) None of these

**Q.6** In another experiment student obtained 194.4 g of pure silver at the end step by 60 g of a polyprotic acid. If the molecular mass of acid is 100g the acid is-

- (A) Monoprotic (B) Diprotic  
(C) Triprotic (D) Tetraprotic

**Q.7** If 0.624g of silver salt of tribasic organic acid was quantitatively reduced to 0.324 g of pure silver what should be molecular weight of acid-

- (A) 300 g (B) 303 g  
(C) 600 g (D) None of these

**Q.8** If 0.304 g of a silver salt of dibasic acid left 0.216 g of silver on ignition. The molecular weight of acid is-

- (A) 88 (B) 90  
(C) 166 (D) None of these

### CHEMISTRY IIT JEE (CLASS TEST - 4) ANSWER KEY

Name : ..... Roll No. : .....

	A	B	C	D		A	B	C	D		A	B	C	D
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					