No.

Date:

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1. a) $(C_2H_5)_2O$ (diethyl ether).

b) $(CH_3)_2CO$ (acetone).

c) dinitrogen pentoxide

d) Carbon disulfide.

Jawab :

a) $(C_2H_5)_2O \rightarrow 4C + 10H + 1O$.

$\rightarrow 4(12,0107) + 10(1,00794) + 15,9994$

$= 48,0428 + 4,03176 + 15,9994 . 10,0794 + 15,9994$.

$= 68,07396$ $74,1216$ g/mol.

b) $(CH_3)_2CO \Rightarrow 3C + 6H + 1O$.

$= 3(12,0107) + 6(1,00794) + 15,9994$

$= 36,0321 + 6,04764 + 15,9994$.

$= 58,07914$ g/mol.

c) $N_2O_5 \Rightarrow 2N + 5O$

$= 2(14,0067) + 5(15,9994)$

$= 28,0134 + 79,997$

$= 108,0104$ g/mol.

d) $CS_2 \rightarrow 1C + 2S$

$= 12,0107 + 2(32,065)$.

$= 12,0107 + 64,13$

$= 76,14107$. g/mol.

No.

Date:

(2.) a) 2 gr of oxygen gass

atom = 2 atom oksigen

Massa O_2 = 2 gr

Ar O = 16 gr/mol.

$Mr\ O_2 = 2\ Ar\ O$ Formula = O_2.

$= 2 \times 16$

$= 32$ g/mol

$n = \frac{gr}{Ar}$.

$n = \frac{2\ gr}{32\ gr/mol}$.

$n = 0{,}0625$ mol

b) 117,0 gr of table salt.

atom = 1atom Na . dan 1atom Cl Formula = NaCl

massa NaCl = 117,0 gr.

Mr = 58,5.

$n = \frac{gr}{Mr} = \frac{117{,}0\ gr}{58{,}5\ gr/mol} = 2$ mol

c) 19,0 gr of CS_2 Formula = CS_2

atom =

$n = \frac{19\ gr}{76\ gr/mol} = 0{,}25$ mol

n = 0,25 mol

No.

Date:

d). 3,8 gr of F_2.

atom = 2 atom flour

$n = \frac{3,8\ gr}{112\ gr/mol} = 0,03\ mol$.

n = 0,03 mol

Formula = Flour.

No.

Date:

(3.) a) diethyl ether = $(C_2H_5)_2O$.

$$\%C = 4 \times \frac{12,0107}{74,1216} \times 100\%$$

$$= 0,64816 \times 100\%$$

$$= 64,816\ \%.$$

$$\%H = 10 \times \frac{1,00794}{74,1216} \times 100\%$$

$$= 0,1359 \times 100\%$$

$$= 13,59\ \%$$

$$\%O = 1 \times \frac{15,9994}{74,1216} \times 100\%$$

$$= 0,2158 \times 100\%$$

$$= 21,58\ \%.$$

~~b). 64,816 % + 13,59 % + 21,58 % =~~

~~b) acetone = $(CH_3)_2CO$~~

~~$\%C = 2 \times \frac{12,0107}{74,1214} \times 100\%$~~

~~$= 0,3240 \times 100\%$~~

~~$= 32,40\ \%$~~

~~$\%H = 6 \times \frac{1,00794}{74}$~~

Date:

b) aceton = $(CH_3)_2CO$

$\%C = \frac{3 \times 12,0107}{58,07914} \times 100\%$

$= 62,039\ \%$

$\%H = \frac{6 \times 1,00794}{58,07914} \times 100\%$

$= 10,412\ \%$

$\%O = \frac{1 \times 15,9994}{58,07914} \times 100\%$

$= 27,54\ \%$

c) carbon disulfide (CS_2)

$\%C = \frac{1 \times 12,0107}{76,1407} \times 100\%$

$= 15,77\ \%$

$\%S = \frac{2 \times 32,065}{76,1407} \times 100\%$

$= 84,22\ \%$.

4. ~~$V_{O_2} = 8L$~~.

~~$V_O = 8L$~~

Date:

(4.) $2\,NO + O_2 \rightarrow 2\,NO_2$.

$8\,L\,NO \times \frac{1\,L\,O_2}{2\,L\,NO} = 4\,L\,O_2$.

$2\,NO_2 = 2N(4L\,O_2)$

$= 8L\,NO_2$. //