

Jawapan Esei Hukum Dasar Kimia

Soalan 1

a) Sebatian A: 2.00 g H dan 16.00 g O. Sebatian B: 2.00 g H dan 32.00 g O.

Bandingkan jisim oksigen: $32 / 16 = 2:1 \rightarrow$ Nisbah bulat kecil $\rightarrow$ Mematuhi hukum perbandingan berganda.

b) Jika A ialah H_2O , maka dalam B: mol H = 1.98, mol O = 2.00 $\rightarrow$ nisbah mol $\approx 1:1 \rightarrow$ Formula empirik = HO

Soalan 2

a) Jisim awal: Mg = 10.00 g, MgO = 16.67 g $\rightarrow$ Jisim O_2 = 6.67 g $\rightarrow$ Jumlah jisim kekal $\rightarrow$ Mematuhi hukum.

b) Persamaan: $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$

Soalan 3

a) X: 36 g C + 48 g O, Y: 36 g C + 96 g O $\rightarrow$ Nisbah O: $96:48 = 2:1 \rightarrow$ Mematuhi hukum.

b) Jika X = CO $\rightarrow$ mol C:O = 1:1; Y $\rightarrow$ mol C:O = 1:2 $\rightarrow$ Formula empirik Y = CO_2

Soalan 4

a) $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3 \rightarrow 3 \text{ L } \text{H}_2 \rightarrow 2 \text{ L } \text{NH}_3 \rightarrow$ Ammonia = 6.00 L

b) Mol $\text{NH}_3 = 6.00 / 22.4 \approx 0.2679 \text{ mol}$

Soalan 5

a) Komposisi: C = 40.0%, H = 6.7%, O = 53.3%. Mol C = 3.33, H = 6.65, O = 3.33 $\rightarrow$ Nisbah = 1:2:1 $\rightarrow$ Formula empirik = CH_2O

b) Nisbah jisim tetap: 12:2:16 $\rightarrow$ peratus = 40%, 6.67%, 53.33% $\rightarrow$ Sama seperti diberi $\rightarrow$ Mematuhi hukum