

Latihan Soal Dan Pembahasan

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Pembahasan Soal

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1. **Jawab: D**

Larutan NaOH 20 % berat : misal massa larutan 100 gram

- Massa NaOH = 20 gram
- Massa pelarut air = 100 – 20 = 80 gram

$$\text{Molal NaOH} = \frac{\text{gram}}{\text{Mr}} \times \frac{1000}{\text{P}} = \frac{20}{40} \times \frac{1000}{80} = \frac{500}{80} = 6,25 \text{ molal}$$

2. **Jawab: A**

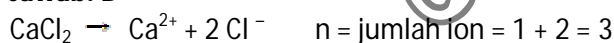
$$X_{\text{urea}} = \frac{\text{mol urea}}{\text{mol urea} + \text{mol air}}$$

$$= \frac{\frac{3}{60}}{\frac{3}{60} + \frac{9}{18}} = \frac{0,05}{0,05 + 0,5} = \frac{0,05}{0,55} = 0,09$$

3. **Jawab: E**

$$\Delta P = P^{\circ} \times X_{\text{glukosa}} = P^{\circ} \times \frac{\text{mol urea}}{\text{mol urea} + \text{mol air}} = 27 \times \frac{\frac{18}{180}}{\frac{18}{180} + \frac{54}{180}} = 27 \times \frac{0,1}{0,1 + 3} = 27 \times \frac{1}{31} \text{ cm Hg}$$

4. **Jawab: B**



$$\Delta T_f = \text{molal} \times K_f \times i \quad \dots i = 1 + (n - 1) \alpha = 1 + (3 - 1) 0,85 = 2,7$$

$$= 0,25 \times 1,86 \times 2,7 = 1,255 \text{ }^{\circ}\text{C}$$

$$T_f \text{ larutan} = T_f \text{ pelarut} - \Delta T_f = 0 - 1,255 = -1,255 \text{ }^{\circ}\text{C}$$

5. **Jawab: D**

Zat terlarut adalah glukosa dan pelarutnya etanol.

$$\text{Massa jenis pelarut } 0,9 \text{ g/mL} \rightarrow \text{massa pelarut} = 300 \times 0,9 = 270 \text{ gram}$$

$$K_b \text{ etanol} = 1,19 ; T_b \text{ larutan} = 79,2 \text{ }^{\circ}\text{C} \text{ dan } T_b \text{ pelarut} = 78,2 \text{ }^{\circ}\text{C}$$

$$\Delta T_b = T_b \text{ larutan} - T_b \text{ pelarut} = 79,2 \text{ }^{\circ}\text{C} - 78,2 \text{ }^{\circ}\text{C} = 1 \text{ }^{\circ}\text{C}$$