

Unit 2A Test Review KEY

I.

A.

- | | |
|-------|--------|
| 1. PS | 6. HM |
| 2. HM | 7. HM |
| 3. HM | 8. PS |
| 4. HT | 9. PS |
| 5. HT | 10. HT |

B.

- | | |
|------|-------|
| 1. C | 6. C |
| 2. E | 7. E |
| 3. E | 8. E |
| 4. C | 9. C |
| 5. E | 10. C |

II.

1. filtration
2. distillation
3. chromatography

III.

A.

- | | | |
|------|------|------|
| 1. I | 3. I | 5. I |
| 2. E | 4. E | 6. I |

B.

- | | | | |
|------|------|------|-------|
| 1. C | 4. P | 7. P | 10. C |
| 2. C | 5. C | 8. C | |
| 3. P | 6. P | 9. P | |

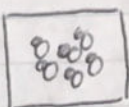
IV.

1. (i) element (ii) compound (iii) compound (iv) molecule
(v) ~~hetero~~ mix homogeneous (vi) compound

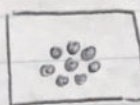
2.



3.

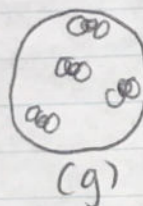
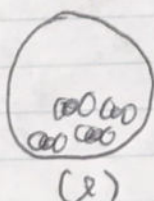
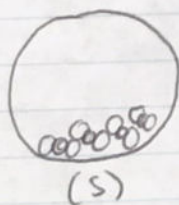
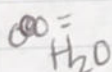


4.



5. a is most dense, then then C is te

6.

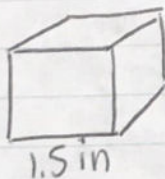


V.

- | | | | |
|---------------------------|-------------------------|-------------------------|---------------------|
| 1. 142°C | 4. 213K | 7. -35°C | 10. 315.5K |
| 2. 143.85°F | 5. -248°C | 8. 1292°F | |
| 3. -459.4°F | 6. 1427K | 9. 310K | |

VI.

1.



$$V_{\text{cube}} = s^3 = 1.5^3 = 3.375 \text{ in}^3 \quad \begin{array}{l} \swarrow 2.54^3 \\ 16.39 \text{ cm}^3 \\ \hline 1 \text{ in}^3 \end{array} = 55.306 \text{ cm}^3$$

$$D = \frac{m}{V} = \frac{45\text{g}}{55.306 \text{ cm}^3} = \boxed{0.81 \text{ g/cm}^3}$$

$$2. D = \frac{m}{V} \Rightarrow \frac{980g}{V} = .27 g/cm^3$$

$$0.98 kg \left| \frac{1000g}{1kg} \right. = 980$$

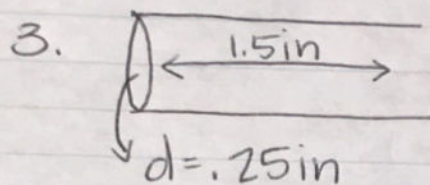
$$V = 980 / .27$$

$$= 3629.6 cm^3$$

$$+ 100 mL$$

$$\boxed{3729.6 mL}$$

this answer is correct mathematically but also pretty unlikely if you think about



$$m = 23.1984g$$

$$(a) D_{Au} = \frac{m}{V} = \frac{23.1984g}{1.206 cm^3}$$

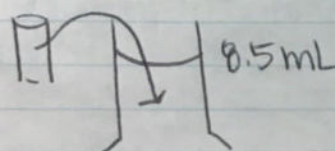
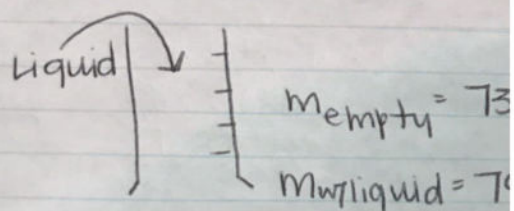
$$= 19.235 \rightarrow \boxed{19.9/cm^3}$$

$$V_{cyl} = \pi r^2 h$$

$$= \pi (.125)^2 (1.5)$$

$$= .0736 in^3$$

$$\frac{.0736 in^3 \left| \frac{2.54^3 cm^3}{1 in^3} \right.}{1} = 1.206 cm^3$$



$$(b) D_{liquid} = \frac{79.16 - 73}{(8.5 - 1.2)}$$

$$= \boxed{.78 g/mL}$$

1. ~~ex~~ 1. exothermic; negative; hot
3. endothermic; exothermic

2. endothermic; +

$$4. q = m \times c \times \Delta T$$

$$1086.75 = 15.75g \times c \times (175 - 25)$$

$$\boxed{c = .46 J/g \cdot C}$$

$$5. q = m \times c \times \Delta T$$

$$= 10.0g \times .90 \times (22 - 55)$$

$$= -297 J$$

$$= -3.0 \times 10^2 J$$

it's actually cooling so the question should ask how much heat is released