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.

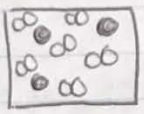
1. I	3. I	5. I
2. E	4. E	6. I

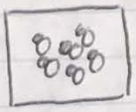
B.

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

IV.

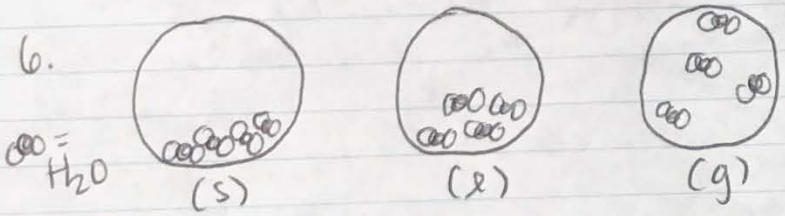
1. (i) element (ii) compound (iii) compound (iv) molecu
(v) ~~hetero~~ mix (vi) compound
homogeneous

2. 

3. 

4. 

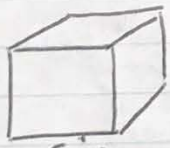
5. a is most dense, then then C is le

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. 

$V_{cube} = s^3 = 1.5^3 = 3.375\ in^3 \left| \frac{16.39\ cm^3}{1\ in^3} \right. = 55.306\ cm^3$ (2.54^3)

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

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

$V = 980/.27$

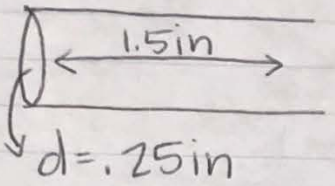
$= 3629.6\,cm^3$

$+ 100\,mL$

$\boxed{3729.6\,mL}$

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

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

3. 

$m = 23.1984\,g$

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

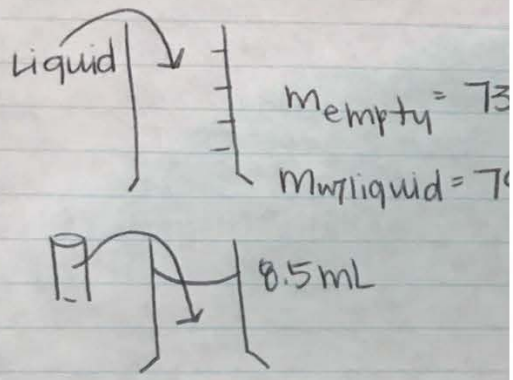
$= 19.235 \rightarrow \boxed{19\,g/cm^3}$

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

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

$= .0736\,in^3$

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



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

$\boxed{= .78\,g/ml}$

I. ~~4.~~ 1. exothermic; negative; hot 2. endothermic; +,

3. endothermic; exothermic

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