Solution Chemistry Review – answer key

1. Alcohol, water
2. Heterogeneous
3. Dissociation
4. Unsaturated, saturated, supersaturated
5. Spectator
6. ??
7. A – heterogeneous, b – homogeneous, c – pure substance
8. Homogeneous
9. Air
10. Polar
11. Ca(OH)2(aq) 🡪 Ca2+(aq) + 2OH-(aq)
12. Ethanol molecules remain whole, salt particles break apart into their component ions
13. 0.125M
14. 7.5g
15. 490 mL
16. A) [Ca2+] = 0.20M, [Cl-]=0.40M b) [Mg2+]=0.15M, [NO3-]=0.30M c) [Fe3+]=0.10M, [SO42-] = 0.15M
17. A) [Fe3+]= 0.10M, [NH4+]=0.12M, [Cl-]=0.42M b) [Ca2+]=0.318M, [Cl-]=0.504M, [NO3-]=0.132M
18. A – ZnS, b – Fe2S3
19. A) 2 KOH + Ni(NO3)2 🡪 2KNO3(aq) + Ni(OH)2(s) b) Ni(OH)2 c) Ni2+ (aq) + 2 OH-(aq) 🡪 Ni(OH)2(s) c) 0.046g
20. Freezing point decreases (we have not covered this)
21. As pure water/solvent evaporates, the solute concentration increases, increasing the boiling point (we have not covered this either)
22. Any salt will decrease the melting point of ice/snow
23. Distillation (not covered)
24. This one you should be able to do
    1. Fe(OH)2
    2. Fe2+ (aq) + 2 OH-(aq) 🡪 Fe(OH)2(s)
    3. 1.35g
    4. [Na+]=0.043M, [NO3-]=0.11M
25. Similar to the last one
    1. BaSO4
    2. Ba2+(aq) + SO42-(aq) 🡪 BaSO4(s)
    3. Sulphate
    4. 29.2g
    5. [K+]=1.5M, [I-]=1.25M
    6. [SO42-]=0.125M