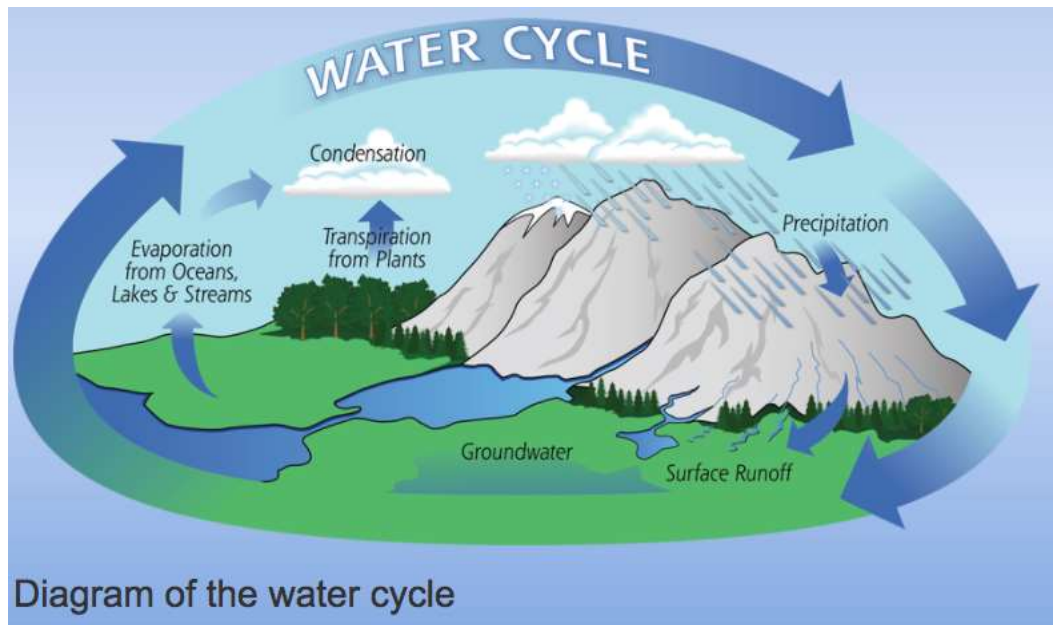


YUSO 2017 HYDROGEOLOGY PART I ANSWER KEY

1. D
2. Aquifer
3. **0.5 point for each a) and b) correctly defined
 - a. Confined aquifer – an aquifer in which an impermeable dirt or rock layer exists that prevents water from seeping into the aquifer from the ground surface located directly above
 - b. Unconfined aquifer- an aquifer into which water seeps from the ground surface directly above the aquifer
4. C
5. **0.5 point for each a) and b)
 - a. Zone of aeration/vadose zone
 - b. Zone of saturation/saturated zone
- 6.



7. D
8. A
9. Effluent stream- a stream that receives recharge (baseflow) from the groundwater table because the water table intersects the stream channel
10. B
11. $Q = -KA (dh/dl)$ **0.20 points for equation and each component correctly identified

Q- total discharge
K- permeability
A- Cross sectional area
dh/dl- hydraulic gradient

12. True
13. A, C, D **0.33 point for each correctly chosen

14. Gravel

15. A

16. Porosity – a measure of how much of a rock is open space. The space between grains or within cracks or cavities of the rock

Permeability – a measure of the ease with which a fluid can move through porous rock

17. D

18. C

19. C

20. B, C **0.5 for each correctly chosen