



II. EQUIPMENT USE AND RECOGNITION

Multiple Choice

- A. Under gravel System:**
1. Typically, an under gravel system should have an average coverage of gravel at about:
 - a. 1 – 2”
 - b. 2 – 3”
 - c. 3 – 4”
 - d. 4 – 5”
 2. An under gravel filter plate(s) should cover:
 - a. only the left back corner of the aquarium
 - b. about ½ the bottom surface of the aquarium
 - c. the right and left back corner of the aquarium
 - d. as much of the bottom surface as possible
 3. An under gravel filter is best serviced by vacuuming at least:
 - a. once per week
 - b. once per month
 - c. once per year
 - d. never
 4. Under gravel plates should be cleansed out, from underneath, of accumulated decomposed organic waste at least:
 - a. once per week
 - b. once per month
 - c. once per year
 - d. never
 5. In cases where more than one filter plate is employed:
 - a. every plate should have a lift tube
 - b. only the left and right plates should have a lift tube
 - c. only the center plate should have a lift tube
 - d. it really doesn't matter how many tubes are used

True or False

6. When using power heads, the lift tube(s) used should extend up to the air/water interface.
 - a. True
 - b. False
7. Air stones used to provide lift never need to be replaced.
 - a. True
 - b. False
8. Typically, power heads drive under gravel filter systems more efficiently than air pumps.
 - a. True
 - b. False
9. Under gravel filters are not complete systems in regards to mechanical and chemical filtration.
 - a. True
 - b. False
10. Sugar fine aragonite is well suited for use in a system using under gravel filtration.
 - a. True
 - b. False

B. Wet/Dry/Trickle Filter Systems:

1. Wet/dry filters:
 - a. eliminates the need for an under gravel filter
 - b. promotes better water conditions than under gravel systems
 - c. are easier to maintain
 - d. all of the above
2. Turnover rates through a wet/dry system should range between:
 - a. 1 – 2 times per hour
 - b. 5 – 8 times per hour
 - c. 2 – 5 times per hour
 - d. 8 -12 times per hour
3. Bioballs acting as the culture media:
 - a. provide more functional surface area in comparison to gravel of the same volume.
 - b. allows for gaseous exchange
 - c. require much less maintenance
 - d. all of the above

4. Prefiltration is:
 - a. difficult to accomplish with an under gravel system
 - b. easily accomplished in a trickle-type system
 - c. none of the above
 - d. both a & b

5. By surface-skimming water as the means of water removal from the tank, trickle filters:
 - a. do not remove all of the waste efficiently
 - b. break surface tension, removing unwanted surfactants, amino acids and protein acetous waste
 - c. causes salt creep to occur
 - d. block light from penetrating the air/water interface

True or False

6. Wet/dry/trickle systems are an efficient way of providing life support for marine systems.
 - a. True
 - b. False

7. Under gravel systems require a greater level of maintenance than do trickle systems.
 - a. True
 - b. False

8. In regards to providing optimal life support for marine animals, protein skimmers greatly enhance water quality.
 - a. True
 - b. False

9. Trickle systems require no maintenance whatsoever, which makes them ideal for people who want maintenance-free systems.
 - a. True
 - b. False

10. When considering the appropriate size for a wet/dry filter sump, the smaller the footprint, the better it is.
 - a. True
 - b. False