Continuing Education Course #434
Biological Odor Control Systems

1. What type of treatment is a dry adsorption system?
- a. Physical
- b. Chemical
- c. Biological

2. Which odor control system uses organic media?
- a. Ionization
- b. Biotrickling filter
- c. Biofilter

3. What type of microorganisms are responsible for degrading odor compounds?
- a. Protozoa
- b. Algae
- c. Bacteria

4. Which type of bacteria degrades hydrogen sulfide?
- a. E. Coli
- b. Thiobacillus
- c. Monocytogenes

5. What is a byproduct of hydrogen sulfide removal?
- a. Sulfuric acid
- b. Sulfate
- c. carbonyl sulfide

6. What is the most common media for a biofilter bed?
- a. Peat moss
- b. Plastic media
- c. Wood chips

7. What does EBCT stand for?
- a. Elevated biological contact time
- b. Elevated bed contact time
- c. Empty bed contact time

8. What is the formula for EBCT?
- a. Bed volume / flow rate
- b. Bed void space / flow rate
- c. Bed volume / air velocity

9. What is the recommended minimum EBCT for removing hydrogen sulfide in a biofilter?
- a. 10 seconds
- b. 30 seconds
- c. 60 seconds

10. What is iron sponge media?
- a. Wood chips impregnated with ferric oxide
- b. Cast iron chips
- c. Ductile iron media

11. What is the recommended minimum relative humidity for biofilter bed?
- a. 50%
- b. 85%
- c. 100%

12. What velocity is common for air piping design?
- a. 20 fpm
- b. 200 fpm
- c. 2000 fpm

13. What is the recommended minimum ratio for orifice to pipe diameter?
- a. 10
- b. 20
- c. 100

14. What bed life can be assumed during design?
- a. 1 to 2 years
- b. 3 to 5 years
- c. 20 years

15. What makes biotrickling filters unique?
- a. Pre-fabricated vessel, synthetic media, and constant spray of water
- b. Pre-fabricated vessel, organic media, and constant spray of water
- c. Pre-fabricated vessel, synthetic media, and bioreactor

16. Typically, which system requires a longer EBCT?
- a. Biofilter
- b. Biotrickling filter
- c. Both the same

17. What makes bioscrubbers unique?
- a. Vertical vessel
- b. Recycling of water
- c. Recycling of bacteria with a bioreactor

18. Which system has the lowest capital cost?
- a. Biofilter
- b. Biotrickling filter
- c. Bioscrubber

19. Which system is considered the most reliable for odor removal?

- ○ a. Biofilter
- ○ b. Biotrickling filter
- ○ c. Bioscrubber

20. What is the formula for calculating lifecycle cost?
- ○ a. Lifecycle Cost = Capital Cost + Annual Maintenance * Years
- ○ b. Lifecycle Cost = Capital Cost + Annual Maintenance * PWF - Salvage Value
- ○ c. Lifecycle Cost = Capital Cost + Annual Maintenance - Salvage Value