Certification Boulevard

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Test Your Knowledge of Water Supply & Other Topics

1. A potable water flow meter reads 225 gallons per minute (gpm) for 10 hours per day, 155 gpm for six hours per day, and 95 gpm for the remainder of the 24-hour day. What is the total daily flow in million gallons per day (mgd)?
   A. 0.64740 mgd B. 0.1372 mgd
   C. 0.2364 mgd D. 0.1870 mgd

2. Which FDEP rule governs water reuse in Florida?
   A. 62-900 B. 62-720
   C. 62-503 D. 62-610

3. What is the flow rate in cubic feet per minute (cfm) of a 1-mgd stream of water?
   A. 1.55 cfm B. 8.34 cfm
   C. 7.48 cfm D. 92.84 cfm

4. Given the following data, calculate the approximate horsepower delivered by this pump:
   • Flow is 700 gpm.
   • TDH is 85 feet.
   • Does not consider pump and motor efficiency.
   A. 15 HP B. 20 HP
   C. 25 HP D. 7.5 HP

5. Which repair kit is designed for use with 150-pound chlorine cylinders?
   A. "A" kit
   B. "B" kit
   C. "C" kit
   D. None of the above.

6. If a gallon of water weighs 8.34 pounds (lbs) and a cubic foot of water holds 7.48 gallons, how much does a cubic foot of water weigh?
   A. 92.8 lbs B. 56.7 lbs
   C. 62.4 lbs D. 3.14 lbs

7. What is the flow velocity in a 12-inch pipe, compared to the flow velocity in a 24-inch pipe, assuming both pipes are carrying the same volume of water flow?
   A. The same.
   B. Twice the velocity.
   C. Three times the velocity.
   D. Four times the velocity.

8. When pumping water from a well to a treatment process, the Total Dynamic Head is the sum of four (4) components, list these components:
   A. _____
   B. _____
   C. _____
   D. _____

9. What is the weight relationship of chlorine liquid compared to water?
   A. Water weighs more than liquid chlorine.
   B. Liquid chlorine weighs 2.5 times more than water.
   C. Water weighs 1.5 times more than liquid chlorine.
   D. Liquid chlorine weighs 1.5 times more than water.

10. What will the pressure gauge read on the suction of a pump if the pump is located at floor elevation of the tank and the tank has 30 feet of static water level?
    A. About 69 psi B. About 9.5 psi
    C. About 13 psi D. About 17 psi

ANSWERS ON PAGE 66

SEND US YOUR QUESTIONS FOR CERTIFICATION BOULEVARD

Do you have a question or an exercise you would like to feature in "Certification Boulevard?" We'll be glad to publish it. Just send your question (with the answer) or your exercise (with the solution) to:

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There is no limit to the number of questions or exercises you may submit. Please include your name, city, and organization or company so we can give you credit.

Certification Boulevard Answer Key

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1. **C. 0.2364 mgd**
   (225 gpm x 10 hrs/day x 60 mins/hr) + (155 gpm x 6 hrs/day x 60 mins/day) + (95 gpm x 8 hrs/day x 60 mins/hr)
   = 135,000 gpd + 55,800 gpd + 45,600
   = 236,400 gpd ÷ 1,000,000
   = 0.2364 mgd

2. **D. 62-610**

3. **D. 92.84 cfm**
   1,000,000 gpd ÷ 1,440 mins/day ÷ 7.48 gal/cu.ft. = 92.84 cfm/mgd

4. **A. 15 HP**
   Horsepower
   = (gpm x TDH, feet x 8.34 lbs/gal) ÷ 33,000 foot lbs/second
   = (700 gpm x 85 TDH x 8.34 lbs/gal) ÷ 33,000
   = 15.04 HP

5. **A. "A" kit**

6. **C. 62.4 lbs**
   8.34 lbs/gal x 7.48 gal/ft³ = 62.4 lbs/ft³

7. **D. Four times the velocity.**
   Cross section of a 12-inch pipe = π r²
   3.14 x (6 in. ÷ 12 in.)² = 0.785 ft²
   Cross section of a 24-inch pipe = π r²
   3.14 x (12 in. ÷ 12 in.)² = 3.14 ft²
   3.14 ft² ÷ 0.785 ft² = 4.0

8. **A) Friction Head, B) Suction Head, C) Static Head, D) Velocity Head**

9. **D. Liquid chlorine weighs 1.5 times more than water.**

10. **C. About 13 psi.**
    Each foot of water generates 0.433 psi
    30 feet of water x 0.433 psi = 12.99 psi