**Maintenance**

1. What does a gradual increase in the bearing temperature of a centrifugal blower indicate?
2. Nothing, bearings will get warmer as the blower runs longer
3. Over or under lubrication
4. Air conditioner is leaking coolant
5. Air is becoming less dense
6. Under normal operating conditions, how often should scraper mechanism and blades of a circular clarifier be inspected and replaced if necessary??
7. Weekly
8. Monthly
9. Quarterly
10. Annually
11. Which of the following indicates that an impellor of a centrifugal pump may be worn?
12. Pump is delivering too much flow
13. Pump is not deliver the design flow
14. Pump is cold
15. Motor speed is too low
16. Which of the following is a likely benefit of a planned maintenance program?
17. Increased emergency repair efficiency
18. Extended equipment life
19. Extended equipment downtime
20. Decrease in safety violations
21. You have just rewired the motor on a centrifugal pump. The pump is now running but generating little pressure and flow. What is most likely the cause?
22. Speed of the impeller too high
23. Pump is primed
24. Water leak in seal
25. Wrong direction of impeller rotation from improper wiring
26. A pump must pump 2000 gpm against a head of 20 feet. What horsepower is required for his work/?
27. 5 HP b. 10 HP c. 50 HP d. 100 HP

**Maintenance Key**

1. B
2. D
3. B
4. B
5. D
6. B

A pump must pump 2000 gpm against a head of 20 feet. What horsepower is required for his work/?

1. First calculate ft-lbs/min

20 ft x (2000 gpm x 8.34 lnbs/gal) = 333,600 ft-lbs/min

1. Convert ft-lb/min to HP

1 HP = 33,000 ft-lbs/min

333,6000 ft-lbs/min

33,000 ft-lbs/min/hp = 10 HP