



Predictive Maintenance Strategy

Knowledge Assessment

1. Predictive maintenance (PdM) is a philosophy that applies technologies to predict failure.

True

False

2. Jason was performing a normal inspection round on his assigned machines. He checked the gauges to ensure temperature was within range and made sure the machine sounded like it was running normally, not under unique stress. Jason noticed the mounting bolts might have shifted slightly from the bolt-tightening marker. The machine didn't feel different, but Jason wrote the discrepancy down anyway. Which predictive technology was Jason using to investigate the machine?

Vibration analysis

Ultrasonic

Visual inspection

Motor analysis

3. Which of the following are benefits of effective PdM application? (check all that apply)

Reduced labor hours

Reduced lost production

Reduced inventory

Extension of equipment life

4. A bearing vendor notified MRO Stores that they recently discovered a manufacturing defect that involved bearings shipped to your facility. Some of those bearings may have been used for repairs prior to the notification. Of the technologies listed below, which could be used to identify if a bad bearing might have been used? (check all that apply)

Vibration analysis

Ultrasonic

Visual inspection

Motor analysis

Thermography

5. Regardless of the PdM technologies chosen for your program, there should be at least one full-time analyst on staff to gather, interpret data and make data-driven decisions.

True

False

6. Each time oil is added to a reduction gearset, in-house oil analysis confirms that contamination levels increase. This was accompanied by an increase in bearing and gear failures. What other predictive technology could be used to determine additional damage caused from contamination?

Thermography
 Ultrasonic
 Visual inspection
 Vibration analysis

7. The focus of a predictive maintenance program is (check all that apply):

Prevention of catastrophic failures
 Reliability of critical production systems
 Reliability and total cost of ownership (TCO) of critical production systems
 Plant performance optimization

8. Predictive maintenance is limited to three technologies: vibration monitoring, thermography and tribology.

True
 False

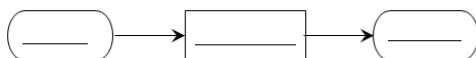
9. Which of the following elements define a PdM program (check all that apply)?

Utilization of technology tools
 Schedule maintenance repairs in periodic time intervals
 Measurement of machine condition
 Schedule maintenance “as-needed”

10. A predictive maintenance program:

Eliminates corrective maintenance work
 Typically requires 50% less maintenance staff
 Is only effective when findings are converted to proactive corrective work
 Will eliminate 100% of unplanned failures

11. Select the 3 elements to complete the following failure model:



Failure Mode, effect on user, root cause
 Effect on user, function, failure mode
 Function, root cause, failure mode
 Root cause, failure mode, effect on user



12. Thermography measurements require an unobstructed "line of sight" between the IR measurement tool and the asset or component being analyzed.
- True
 - False
13. What is the *best place to start* when determining which assets to first include in a PdM program?
- Ask an experienced member of the site leadership team
 - Identify the equipment in worst physical condition
 - List the top 10 assets by number of work order requests
 - Conduct a criticality analysis
14. An internal PdM procedure should include program roles and responsibilities, how to apply technologies within the site, how to report findings and repairs and _____.
- Specific contractors to hire
 - Actions required depending on findings
 - A static number of employees to staff the overall program
15. Equipment vendors and contractors should provide all needed training for your staff to manage a PdM program.
- True
 - False