

Chapter 8
CLEANING ENGINE PARTS

Directions:

- A. Use a pencil and Scantron answer form
 - B. Write your name on the answer form
 - C. Mark the letter choice of the best answer
 - D. Do not write on the test
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1. Machinist A recommends caustic degreasers for aluminum. Machinist B recommends caustics for cleaning iron, steel, or aluminum. Who is right?
 - a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
 2. Machinist A says that detergent degreasers damage parts made of aluminum. Machinist B says that detergents are safe for cleaning iron, steel, or aluminum. Who is right?
 - a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
 3. Machinist A says that solutions with a pH below 7 are "basic." Machinist B says that solutions with a pH over 7 are "acidic." Who is right?
 - a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
 4. Machinist A says that bead blasting is safe for cleaning combustion chambers and ports. Machinist B says keep beads out of water jackets and oil passages. Who is right?
 - a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
 5. Prior to bead blasting, _____ parts.
 - a. de-carbonize
 - b. steam clean
 - c. de-scale
 - d. degrease and dry
 6. Machinist A says that immersion in alkaline or basic solutions removes rust in water jackets. Machinist B says that immersion in acidic solutions removes this rust. Who is right?

- a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
7. Machinist A says that immersion in acids removes oil and grease from castings. Machinist B says that immersion in caustics removes rust and scale. Who is right?
- a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
8. Cam bearings left in blocks or heads will be damaged if cleaned in
- a. caustics or cleaning ovens
 - b. detergents
 - c. solvents
 - d. degreasers
9. Machinist A says that to remove deposits in ring grooves, use a ring groove scraper. Machinist B says that segments of the old rings work for this purpose. Who is right?
- a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
10. The bead blaster uses _____ for cleaning.
- a. round glass shot
 - b. sand
 - c. aluminum oxide
 - d. silicon carbide
11. Machinist A says clean piston and rod assemblies in the hot tank. Machinist B says pistons and rods lock up after immersion in hot detergents. Who is right?
- a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
12. Machinist A says strip intake manifolds of sensors prior to oven cleaning. Machinist B says remove heat shields from the underside to remove deposits. Who is right?
- a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
13. To thoroughly clean rocker arm shaft assemblies,
- a. remove them

- b. disassemble and remove core plugs from shafts
 - c. hot tank the assemblies
 - d. wash assemblies in solvent
14. Machinist A says that wire flare brushes remove deposits from combustion chambers. Machinist B says that these brushes can damage aluminum heads. Who is right?
- a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
15. Cross-contamination between degreasing and descaling solutions
- a. helps degreasers remove scale
 - b. helps descalers remove grease
 - c. neutralizes solutions
 - d. has no effect on performance
16. The time required for degreasing is reduced by
- a. agitating parts
 - b. heating solutions
 - c. spraying the solution onto parts
 - d. combinations of these
17. Machinist A says do not bead blast cylinder heads. Machinist B says that beads must be kept out of, or removed from, water jackets, oil galleys, and tapped holes. Who is right?
- a. A only
 - b. B only
 - c. Both A and B
 - d. Neither A or B
18. The primary cause of bearing damage is
- a. lack of oil
 - b. dirt or particle contamination
 - c. improper assembly
 - d. misalignment
19. Before installation, oil pump pickup screens must be
- a. checked for position
 - b. degreased
 - c. degreased and bead blasted
 - d. cleaned or replaced
20. Machinist A says that caustics dissolve the carbon in combustion chambers. Machinist B says that no cleaning solution dissolves carbon. Who is right?

- a. A only
b. B only
c. Both A and B
d. Neither A or B
21. Machinist A says that beads in cooling systems block thermostats. Machinist B says that the beads damage water pump seals thereby causing pump failure. Who is right?
- a. A only
b. B only
c. Both A and B
d. Neither A or B
22. Machinist A says that hot tank cleaning removes all deposits from oil galleys in blocks, heads, and crankshafts. Machinist B says that these galleys require scrubbing with bore brushes. Who is right?
- a. A only
b. B only
c. Both A and B
d. Neither A or B
23. Machinist A says degrease iron and steel in ovens in the 600 to 700-degree F. range. Machinist B says clean aluminum heads at no more than 500 degrees F. Who is right?
- a. A only
b. B only
c. Both A and B
d. Neither A or B
24. The secondary or afterburner in a cleaning oven operates at approximately _____ degrees F.
- a. 300-400
b. 400-500
c. 500-700
d. 1200-1400
25. The secondary burner in a cleaning oven
- a. cycles on and off to maintain temperature
b. goes off when the primary burner comes on
c. comes on before 400 degrees F. and remains on
d. comes on when the primary burner goes off
26. Petroleum based oils volatilize in the _____ degrees F range.
- a. 200-300
b. 400-500
c. 600-700

- d. 1100-1400
27. Airless shot blasters use
- metal shot
 - glass shot
 - glass beads
 - silicon carbide abrasives
28. Machinist A says that blasting with steel shot is faster and less labor intensive than bead blasting. Machinist B says do not blast aluminum heads with steel shot. Who is right?
- A only
 - B only
 - Both A and B
 - Neither A or B
29. To reduce labor, remove shot and beads from castings
- with compressed air
 - in jet washers
 - by tumbling
 - by hot tanks
30. Machinist A says that a "Hazardous Waste Generator" produces 220 Pd of waste per year. Machinist B says that 2,200 Pd must be produced per year to be classified as such. Who is right?
- A only
 - B only
 - Both A and B
 - Neither A or B
31. Machinist A says that once classified as a generator, waste hauling requires an EPA permit and manifest. Machinist B says contain, label, date, and haul off wastes within the required time limits. Who is right?
- A only
 - B only
 - Both A and B
 - Neither A or B
32. Machinist A says that honing oils and grinding coolants in machinery are hazardous wastes. Machinist B says that these materials become hazardous waste only when removed from their processes. Who is right?
- A only
 - B only
 - Both A and B
 - Neither A or B
33. Machinist A says that surface rust forms especially fast on castings fresh out of hot tanks or ovens. Machinist B says that to prevent corrosion, treat castings

with rust inhibitor and store them in a dry place. Who is right?

- | | | | |
|----|--------|----|----------------|
| a. | A only | c. | Both A and B |
| b. | B only | d. | Neither A or B |

34. When tumbling small parts, protect

- a. spring retainers
- b. valve springs
- c. valve stems
- d. valve faces

35. Machinist A says that hot tank cleaning solutions remove rust and scale from threaded holes. Machinist B says use wire bore brushes or taps to clean threaded holes. Who is right?

- | | | | |
|----|--------|----|----------------|
| a. | A only | c. | Both A and B |
| b. | B only | d. | Neither A or B |

36. Ultrasonic cleaning works on the principle of

- a. molecular explosion
- b. molecular implosion
- c. solvent action
- d. detergency

37. Machinist A says that for safety when blowing debris from blind holes, hold a rag over the hole. Machinist B says that for safety, do not blow-dry parts wet with solvents. Who is right?

- | | | | |
|----|--------|----|----------------|
| a. | A only | c. | Both A and B |
| b. | B only | d. | Neither A or B |

38. Machinist A says degrease rubber parts in caustics. Machinist B says degrease rubber parts using short cycles in detergents. Who is right?

- | | | | |
|----|--------|----|----------------|
| a. | A only | c. | Both A and B |
| b. | B only | D. | Neither A or B |

39. Machinist A says clean exhaust crossovers in hot tanks or spray cabinets. Machinist B says do this in the cleaning oven. Who is right?

- | | | | |
|----|--------|----|----------------|
| a. | A only | c. | Both A and B |
| b. | B only | d. | Neither A or B |

40. Remove glass beads from castings while

- a. hot

- b. cold
- c. wet
- d. dry