

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Instructor: \_\_\_\_\_ Period: \_\_\_\_\_

# 47

## Engine Tune-Up



### Objective:

After studying this chapter, you will be able to perform an engine tune-up.

### Engine Tune-Up

1. A modern tune-up is performed as \_\_\_\_\_ instead of a driveability problem
2. Spark plug replacement for today's engines aren't scheduled until after \_\_\_\_\_ miles.
3. List some of the **normal** service and replacement items in a **minor** tune up.
  - A. \_\_\_\_\_
  - B. \_\_\_\_\_
  - C. \_\_\_\_\_
  - D. \_\_\_\_\_
  - E. \_\_\_\_\_
  - F. \_\_\_\_\_
4. List some of the **normal** service and replacement items in a **major** tune up.
  - A. \_\_\_\_\_
  - B. \_\_\_\_\_
  - C. \_\_\_\_\_
  - D. \_\_\_\_\_
  - E. \_\_\_\_\_
  - F. \_\_\_\_\_
5. List six (6) of the **diagnostic** tools used during a **major** tune up.
  - A. \_\_\_\_\_
  - B. \_\_\_\_\_
  - C. \_\_\_\_\_
  - D. \_\_\_\_\_
  - E. \_\_\_\_\_
  - F. \_\_\_\_\_

6. What are some of the **performance** factors affected by a tune up.

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_
- E. \_\_\_\_\_
- F. \_\_\_\_\_

7. A modern OBD II automobile has a rough idle. Technician A says a tune-up will not correct the condition in most cases. Technician B says the rough idle is due to a defective or malfunctioning sensor, actuator, or ECM. Which technician is correct?

**Technician A**    **Technician B**    **Both**    **Neither**

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### General Tune-Up Rules

8. Why is it important to gather engine and vehicle performance information before performing the tune-up? \_\_\_\_\_

\_\_\_\_\_

9. Why is it important to bring the engine up to full operating temperature prior to diagnosing an operating condition?

\_\_\_\_\_

10. Why is it important to maintain a vehicle's service records? \_\_\_\_\_

\_\_\_\_\_

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### Tune-Up Safety Rules

11. OBD II automobiles require the battery be disconnected when performing vehicle service and maintenance. Why is this important? \_\_\_\_\_

\_\_\_\_\_

12. List four (4) safety rules to follow when performing a tune-up:

- A. \_\_\_\_\_
- B. \_\_\_\_\_
- C. \_\_\_\_\_
- D. \_\_\_\_\_

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### Typical Tune-Up Procedures

13. List the six (6) vehicles inspections performed during **any** tune-up:

- A. \_\_\_\_\_ C. \_\_\_\_\_
- B. \_\_\_\_\_ D. \_\_\_\_\_
- C. \_\_\_\_\_ E. \_\_\_\_\_

14. List three (3) important steps in replacing spark plug wires:  
 A. \_\_\_\_\_  
 B. \_\_\_\_\_  
 C. \_\_\_\_\_
15. When replacing spark plugs in an aluminum engine, should the engine be warm or cold? Why? \_\_\_\_\_  
 \_\_\_\_\_
16. List the correct tools used to remove and replace spark plugs: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
17. What is the correct colors observed on a spark plug removed from an efficiently operating engine? \_\_\_\_\_
18. What are two (2) steps that **must** be performed before installing a spark plug in an engine? \_\_\_\_\_
19. Spark plugs must be installed first \_\_\_\_\_ , before
20. When installing spark plugs equipped with metal sealing washers the spark plug should be threaded in until it bottoms, then tightened an additional \_\_\_\_\_ to \_\_\_\_\_ turn.
21. What will happen if the spark plug wires are not put on the correct cylinder's spark plug? \_\_\_\_\_  
 \_\_\_\_\_
22. What is the suggested replacement interval for one- and two-wire O<sub>2</sub> sensors? \_\_\_\_\_ For three wire sensors? \_\_\_\_\_
23. What is the recommended procedure for replacing an O<sub>2</sub> sensor? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
24. A \_\_\_\_\_ test is performed during an engine's life to check the engine's mechanical condition with disassembly.
25. List the three (3) primary **adjustments** performed during a tune-up:  
 A. \_\_\_\_\_ B. \_\_\_\_\_ C. \_\_\_\_\_

### Diesel Engine Tune-Up

26. Diesel engines require periodic maintenance similar to gasoline engines, but don't have \_\_\_\_\_ to replace or an \_\_\_\_\_ to fail.
27. What are the typical service tasks performed during diesel engine maintenance intervals: A. \_\_\_\_\_ B. \_\_\_\_\_  
 C. \_\_\_\_\_ D. \_\_\_\_\_  
 E. \_\_\_\_\_ F. \_\_\_\_\_  
 G. \_\_\_\_\_ H. \_\_\_\_\_
28. Describe/Define a **maintenance interval**: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_