



2005 State Competition
FFA Agricultural Mechanics Contest
University of Missouri
50 points

Name _____
Contestant Number _____
Chapter _____

Small Gas Engine

All questions are 2.5 points each.

Looking at the service manual and the engine labeled 1, answer the following questions.

1. What is the bore of the engine?
 - a. 2.677 in
 - b. 3.000 in
 - c. 3.120 in
 - d. 3.436 in

2. What tool did you use to measure this?
 - a. Telescopic gauge and micrometer
 - b. Tape Measure
 - c. Feeler gauge
 - d. Caliper

3. What is the stroke of the engine?
 - a. 2.205 in
 - b. 2.75 in
 - c. 2.438 in
 - d. 2.625 in

4. What tool did you use to measure this?
 - a. Telescopic gauge and micrometer
 - b. Tape Measure
 - c. Feeler gauge
 - d. Caliper

5. What is the cubic inch displacement of the engine?
 - a. 12.48 in³
 - b. 19.44 in³
 - c. 18.64 in³
 - d. 24.36 in³

6. What is the spark plug gap for the plug tagged #6?
 - a. 0.020 inches
 - b. 0.030 inches
 - c. 0.050 inches
 - d. 0.060 inches

7. Is the spark plug gap within manufacturer's specifications?

- a. Yes
- b. No

Looking at the service manual and engine labeled 2, answer the following questions.

8. What type of oil should be used in this engine when operating at temperatures below 0°F?
- a. 5W-30
 - b. 10W-30
 - c. 5W-30 Synthetic
 - d. 10W-40 Synthetic
9. What is the recommended service interval for the air cleaner cartridge if equipped with a pre-cleaner?
- a. 25 hrs
 - b. 50 hrs
 - c. 100 hrs
 - d. 300 hrs
10. What is the low idle speed for this engine?
- a. 1700 rpm
 - b. 1750 rpm
 - c. 1800 rpm
 - d. 1200 rpm

Looking at the engine labeled 3 use the appropriate tool to measure and answer the following questions.

11. Measure the intake valve clearance.
- a. .005-.007 in
 - b. .007-.009 in
 - c. .009-.011 in
 - d. .004-.006 in
12. Measure the exhaust valve clearance.
- a. .005-.007 in
 - b. .007-.009 in
 - c. .009-.011 in
 - d. .004-.006 in

Looking at the appropriate engine, select the best answer.

Engine 4

13.
 - a. Missing oil slinger
 - b. Missing tappet
 - c. Out of time
 - d. Missing spring retainer
 - e. Improper spark plug gap

Engine 5

- 14. a. Missing oil slinger
- b. Missing tappet
- c. Out of time
- d. Missing spring retainer
- e. Improper spark plug gap

Engine 6

- 15. a. Missing oil slinger
- b. Missing tappet
- c. Out of time
- d. Missing spring retainer
- e. Improper spark plug gap

Engine 7

- 16. a. Missing oil slinger
- b. Missing tappet
- c. Out of time
- d. Missing spring retainer
- e. Improper spark plug gap

Looking at the tools and parts in front of you, select the best answer for the items tagged 17 - 20.

- 17. a. exhaust valve
 - b. intake valve
 - c. tappet
 - d. valve lapper
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- 18. a. crankshaft
 - b. camshaft
 - c. flywheel
 - d. starter bendix
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- 19. a. valve spring compressor
 - b. piston ring compressor
 - c. valve spring retainer
 - d. cylinder hone
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- 20. a. flow-jet carburetor
 - b. vacu-jet carburetor
 - c. pulsa-jet carburetor
 - d. quadra-jet carburetor