**Small Engines CDE 2**

**MULTIPLE CHOICE**

1. Which of the following would **not** be found in the crankcase?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | oil | c. | camshaft |
| b. | breather | d. | connecting rod |

ANS: B PTS: 1

2. Which of the following would **not** be found in the crankcase?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | oil slinger | c. | emulsion tube |
| b. | connecting rod cap | d. | tappets |

ANS: C PTS: 1

3. Which of the followng would **not** be found in the crankcase?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | welch plug | c. | mechanical governor lever |
| b. | crankpin journal | d. | flyweights |

ANS: A PTS: 1

4. The camshaft opens and closes the:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | intake valve | c. | reed valve |
| b. | exhaust valve | d. | intake and exhaust valve |

ANS: D PTS: 1

5. \_\_\_\_\_\_\_\_\_\_ are off-center enlargements on the camshaft that converts rotary motion to reciprocating motion.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | flyweights | c. | lobes |
| b. | lifters | d. | gears |

ANS: C PTS: 1

6. The camshaft has \_\_\_\_\_ lobes.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 2 | c. | 4 |
| b. | 3 | d. | 5 |

ANS: A PTS: 1

7. On most small engines the lobes of the camshaft are located directly under the \_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | piston | c. | valves |
| b. | crankshaft | d. | tappets |

ANS: D PTS: 1

8. On some engine designs, the camshaft can be located in the cylinder head above the \_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | valves | c. | carburetor |
| b. | tappets | d. | governor |

ANS: A PTS: 1

9. Camshafts are made of:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | steel | c. | steel and cast iron |
| b. | aluminum | d. | none are correct |

ANS: C PTS: 1

10. The surface of the camshaft is \_\_\_\_\_\_\_\_\_\_\_\_ to improve wear-ability.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | hardened | c. | enlarged |
| b. | painted | d. | treated |

ANS: A PTS: 1

11. To make hand cranking easier, some small engines have an automatic \_\_\_\_\_\_\_\_\_\_\_\_ mechanism on the camshaft.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | governor control | c. | compression release |
| b. | oil slinger | d. | power release |

ANS: C PTS: 1

12. The automatic compression release mechanism on the camshaft lifts the \_\_\_\_\_\_\_\_ valve slightly during cranking and releases part of the compression pressure.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | intake | c. | reed valve |
| b. | exhaust | d. | intake and exhaust |

ANS: B PTS: 1

13. Which of the following **is** a part of some automatic compression release mechanisms that are installed on some small engines?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a bolt and a nut | c. | two - 10 fine threaded screws |
| b. | a washer | d. | flyweights |

ANS: D PTS: 1

14. Which of the following **is** a part of some automatic compression release mechanisms that are installed on some small engines?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a tab | c. | a tab, spring and linkage |
| b. | a spring | d. | a tab and a spring |

ANS: D PTS: 1

15. Automatic compression release mechanisms are only engaged until the engine reaches approximately \_\_\_\_\_\_\_\_ rpm’s.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 100 | c. | 1,000 |
| b. | 600 | d. | 2,500 |

ANS: B PTS: 1

16. The camshaft is driven by a \_\_\_\_\_\_\_\_\_\_ on the crankshaft.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | lobe | c. | spring |
| b. | gear | d. | flywheel |

ANS: B PTS: 1

17. The camshaft gear and crankshaft gear has \_\_\_\_\_\_\_\_\_\_\_\_ that must be aligned in order for the valves to open and close at the right time.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | lobes | c. | teeth |
| b. | a keyway | d. | timing marks |

ANS: D PTS: 1

18. The camshaft gear is \_\_\_\_\_\_\_\_ as large as the crankshaft gear.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 4 times | c. | 2.5 times |
| b. | 3 times | d. | 2 times |

ANS: D PTS: 1

19. How many revolutions does a camshaft make to one revolution of the crankshaft?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 1/2 | c. | 1 1/2 |
| b. | 1 | d. | 2 |

ANS: A PTS: 1

20. How many revolutions does a crankshaft make to each power stroke of the engine?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 1 | c. | 3 |
| b. | 2 | d. | 4 |

ANS: B PTS: 1

21. Counterweights are designed into the crankshaft to provide:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | more power | c. | engine balancing |
| b. | increased engine speed | d. | better ignition |

ANS: C PTS: 1

22. The tapered end of the crankshaft has a \_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | hollow inside | c. | keyway |
| b. | needle point | d. | magnet |

ANS: C PTS: 1

23. The crankshaft has three \_\_\_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | moving parts | c. | heads |
| b. | threaded parts | d. | journals |

ANS: D PTS: 1

24. The three crankshaft journals are called:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | flywheel, crankpin and pto | c. | magneto, crankpin and pto |
| b. | tapered, round and cylindrical | d. | magneto, crankpin and stem |

ANS: C PTS: 1

25. The flywheel is attached to the \_\_\_\_\_\_\_\_\_\_\_\_ journal of the crankshaft.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | pto | c. | magneto |
| b. | flywheel | d. | crankpin |

ANS: C PTS: 1

26. The blade of a push mower is attached to the \_\_\_\_\_\_\_\_\_\_\_\_ journal of the crankshaft.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | pto | c. | tapered |
| b. | stem | d. | crankpin |

ANS: A PTS: 1

27. The connecting rod is attached to the \_\_\_\_\_\_\_\_\_\_\_\_ journal of the crankshaft.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | tapered | c. | magneto |
| b. | flywheel | d. | crankpin |

ANS: D PTS: 1

28. Crankshaft journals are measured with a:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | voltmeter | c. | micrometer |
| b. | feeler gauge | d. | telescoping gauge |

ANS: C PTS: 1

29. Which of the following statements **is** true concerning crankshaft journals?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | All three crankshaft journals must be measured and checked with the specifications in the repair manual to see if they are worn. | c. | There is only a specification for the crankpin journal. |
| b. | There are not any specifications for any of the journals. | d. | Crankshaft journals can wear out but a visual check is all that is recommended. |

ANS: A PTS: 1

30. Which of the following statements is **not** true?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | The connecting rod has a small end and a big end. | c. | The connecting rod screws have fine threads. |
| b. | The small end of the connecting rod attaches to the crankshaft. | d. | The samll end of the connecting rod attaches to the piston pin. |

ANS: B PTS: 1

31. The movement along the axis of a crankshaft on a small engine is called:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | end play | c. | throw |
| b. | radial force | d. | stroke |

ANS: A PTS: 1

32. The device used to measure the end play of a crankshaft is a:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | micrometer | c. | dial indicator |
| b. | voltmeter | d. | stator |

ANS: C PTS: 1

33. How do you get more end play on a crankshaft?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | use a thinner oil pan gasket | c. | torque the oil pan bolts |
| b. | use a thicker oil pan gasket | d. | buy a different crankshaft |

ANS: B PTS: 1

34. The bearings that support the crankshaft are called:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | crankshaft main bearings | c. | crankpin bearings |
| b. | crankshaft thrust bearings | d. | crankshaft side bearings |

ANS: A PTS: 1

35. \_\_\_\_\_\_\_\_\_\_\_\_ is the space between the inner bearing surface and the crankpin journal of the crankshaft.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Bearing clearance | c. | Crankpin clearance |
| b. | Crankshaft clearance | d. | Journal clearance |

ANS: A PTS: 1

36. A \_\_\_\_\_\_\_\_\_\_\_\_ is used to measure the clearance between the inner bearing surface and the crankpin journal of the crankshaft.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | caliper | c. | plastigage |
| b. | crankpin gauge | d. | micrometer |

ANS: C PTS: 1

37. A crankcase \_\_\_\_\_\_\_\_\_\_ prevents leakage of oil from the area where the crankshaft and crankcase come together.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | gasket | c. | lubricant |
| b. | washer | d. | seal |

ANS: D PTS: 1

38. Seals can be made of:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | neoprene | c. | graphite |
| b. | leather | d. | any of the above |

ANS: D PTS: 1

39. A typical crankcase seal has a \_\_\_\_\_\_\_\_\_\_ outer shell with a \_\_\_\_\_\_\_\_\_\_ center.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | steel, neoprene | c. | steel, plastic |
| b. | neoprene, steel | d. | plastic, steel |

ANS: A PTS: 1

40. A typical crankcase seal has a small \_\_\_\_\_\_\_\_\_\_ that keeps the sealing lip in constant contact with the shaft that it seals.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | round plunger | c. | rubber shaft |
| b. | coil spring | d. | rubber seal |

ANS: B PTS: 1

41. Which of the followng statements **is** true concerning a crankcase seal?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | The sealing lip must face toward the fluid that is being sealed in. | c. | The sealing lip must face toward the fluid that is being sealed in and the sealing lip must face the crankcase. |
| b. | The sealing lip must face the crankcase. | d. | none are correct |

ANS: C PTS: 1

42. When removing the crankcase cover from the crankshaft, it is recommended to put \_\_\_\_\_\_\_\_ over the keyway to keep the sharp keyway edges from cutting the oil seal.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | plastic | c. | WD-40 |
| b. | a rag | d. | tape |

ANS: D PTS: 1

43. Before installing a new crankcase seal, it is recommended to apply \_\_\_\_\_\_\_\_\_\_\_\_ to the outside of the shell of the seal.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | WD-40 | c. | oil |
| b. | a liquid sealant | d. | grinding compound |

ANS: B PTS: 1

44. The purpose of the flywheel key is to:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | provide a hotter spark. | c. | give the engine a better rotation. |
| b. | hold the flywheel in an exact position. | d. | make the engine spin faster. |

ANS: B PTS: 1

45. The flywheel key is made of:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | steel | c. | brass |
| b. | aluminum | d. | iron |

ANS: B PTS: 1

46. Why is the flywheel key made of aluminum?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | to cut down on cost | c. | because aluminum is not as conductive as steel |
| b. | aluminum is more durable than steel | d. | so it will shear if the blade hits something hard |

ANS: D PTS: 1

47. The flywheel key should be inspected to see if it is:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | discolored | c. | magnetic |
| b. | swollen | d. | partly sheared |

ANS: D PTS: 1

48. If the flywheel key is partly sheared then the engine will be:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | out of balance | c. | out of time |
| b. | low on compression | d. | still in good shape |

ANS: C PTS: 1

49. During the non-power strokes, the inertia of the flywheel keeps the:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | crankshaft spinning | c. | crankshaft spinning and engine operation smooth |
| b. | engine operation smooth | d. | none are correct |

ANS: C PTS: 1

50. Magnets cast into the flywheel produce:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | electrical current for the battery | c. | electrical current for the lights |
| b. | electrical current for the ignition system | d. | electrical current for the computer |

ANS: B PTS: 1

51. Which of the following is the purpose of the fins on a flywheel?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | helps keep the engine cool | c. | makes the engine look better |
| b. | helps to balance the flywheel rotation | d. | provides a more efficient ignition system |

ANS: A PTS: 1

52. The flywheel is fastened to the \_\_\_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | engine block | c. | camshaft |
| b. | connecting rod | d. | crankshaft |

ANS: D PTS: 1

53. Which of the following **can** be used to remove a flywheel?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a knock-off tool | c. | a knock-off tool and a flywheel puller |
| b. | a flywheel puller | d. | none are correct |

ANS: C PTS: 1

54. When the flywheel is removed it should be:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | cleaned right away | c. | replaced |
| b. | inspected | d. | nothing should be done |

ANS: B PTS: 1

55. When a flywheel is inspected, it should be inspected for:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | cracks | c. | spark |
| b. | discoloration | d. | all are correct |

ANS: A PTS: 1

56. When a flywheel is inspected, it should be inspected for:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | compression | c. | elasticity |
| b. | magnetism | d. | all are correct |

ANS: B PTS: 1

57. When a flywheel is inspected, it should be inspected for:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | mounting hole damage | c. | mounting hole and keyway damage |
| b. | keyway damage | d. | none are correct |

ANS: C PTS: 1

58. Which of the following **is** a recommended way to check the strength of the flywheel magnet?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Place a socket on the magnet and shake the flywheel to see if the socket remains on the magnet. | c. | Hit it with a hammer and listen to the sound of it. |
| b. | Remove the flywheel key and spin the flywheel freely on the crankshaft to see if it spins fast enough. | d. | There is no way to check the strength of the flywheel magnet. |

ANS: A PTS: 1

59. \_\_\_\_\_\_\_\_\_\_\_\_ is the heart of the magneto system.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | The spark plug | c. | The breaker points |
| b. | Magnetism | d. | The coil |

ANS: B PTS: 1

60. The only moving parts in a solid state ignition system is the:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | breaker points arm | c. | permanent magnets |
| b. | spark plug electrode | d. | connecting rod |

ANS: C PTS: 1

61. A measure of how much force is devoted toward twisting or turning is called:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | binding | c. | torque |
| b. | resistance | d. | radial force |

ANS: C PTS: 1

62. The formula for torque is:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Force - Lever-Arm Length | c. | Force X Lever-Arm Length |
| b. | Force / Lever-Arm Length | d. | Force + Lever-Arm Length |

ANS: C PTS: 1

63. An engine specification of 144 inch pounds would be converted to:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 12 foot lbs. | c. | 36 foot lbs. |
| b. | 24 foot lbs. | d. | 1,728 foot lbs. |

ANS: A PTS: 1

64. Which of the following statements **is** true?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Cylinder head bolts do not have to be torqued. | c. | When tightening the cylinder head bolts, start in the upper left corner and proceed clockwise. |
| b. | It is recommended that you use a new head gasket when reinstalling the cylinder head. | d. | Gasket cement or sealer can be used as a head gasket. |

ANS: B PTS: 1

65. Which of the following **cannot** be replaced without replacing the bigger part that it is attached to?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | valve seat inserts | c. | oil seals |
| b. | valve face | d. | piston rings |

ANS: B PTS: 1

66. Which of the following **cannot** be replaced without replacing the bigger part that it is attached to?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | welch plug | c. | primer bulb |
| b. | gaskets | d. | valve head |

ANS: D PTS: 1

67. Where is the greatest amount of wear in a cylinder?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | top of the cylinder | c. | bottom of the cylinder |
| b. | middle of the cylinder | d. | cylinders wear evenly from top to bottom |

ANS: A PTS: 1

68. Where is the least amount of wear in a cylinder?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | top of the cylinder | c. | bottom of the cylinder |
| b. | middle of the cylinder | d. | cylinders wear evenly from top to bottom |

ANS: C PTS: 1

69. Cylinders wear more at the top because of:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | the dust and grit brought in with the air-fuel charge | c. | the lack of lubrication in the upper part of the cylinder |
| b. | the wearing action of burning gases | d. | all of the above |

ANS: D PTS: 1

70. When checking for cylinder taper, the measurements should be obtained:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | at the very top and at the very bottom | c. | just below the ring ridge and just below the ring travel |
| b. | at the very top and in the middle | d. | it doesn’t matter |

ANS: C PTS: 1

71. Although it can vary because of engine design and from manufacturer to manufacturer, as a rule of thumb, if the taper in a cylinder becomes greater than \_\_\_\_\_\_\_\_ ring tension on the cylinder walls is lost.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | .001 inch | c. | .010 inch |
| b. | .005 inch | d. | .020 inch |

ANS: C PTS: 1

72. Which of the following can be a result of the taper of a cylinder becoming so great that ring tension is lost?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | burning large amounts of oil | c. | warped valves |
| b. | loss of engine balance | d. | governor malfunction |

ANS: A PTS: 1

73. Which of the following can be a result of the taper of a cylinder becoming so great that ring tension is lost?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | cracked cylinder head | c. | burned valve |
| b. | piston slap | d. | blown head gasket |

ANS: B PTS: 1

74. Which of the following can be a result of the taper of a cylinder becoming so great that ring tension is lost?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | sheared flywheel key | c. | ring wear and damge |
| b. | flooded engine | d. | stopped up carburetor |

ANS: C PTS: 1

75. Once the taper of a cylinder becomes too great, it can be corrected by:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | buying a new piston | c. | honing the cylinder |
| b. | boring the cylinder oversize | d. | it cannot be corrected |

ANS: B PTS: 1

76. Reconditioning a cylinder would involve which of the following?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | inspection and measurement | c. | inspection, honing and measurement |
| b. | honing | d. | none are correct |

ANS: C PTS: 1

77. Reconditioning a cylinder would involve which of the following?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | inspection and measurement | c. | inspection, reboring and measurement |
| b. | reboring | d. | none are correct |

ANS: C PTS: 1

78. If light scratches are to be removed from a cylinder, a \_\_\_\_\_\_\_\_\_\_\_\_ should be used.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | ridge reamer | c. | boring machine |
| b. | hone | d. | sander |

ANS: B PTS: 1

79. Cylinder hones are used with a:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | portable electric drill | c. | portable electric drill and drill press |
| b. | drill press | d. | none are correct |

ANS: C PTS: 1

80. The finish on a reconditioned cylinder should have a:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 45 degree crosshatch appearance | c. | very rough finish |
| b. | slick finish | d. | finish showing lines going up and down |

ANS: A PTS: 1

81. After reconditioning a cylinder, it should be washed in:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a commercial parts cleaning solvent and then with soap and hot water | c. | soap and hot water only |
| b. | a commercial parts cleaning solvent only | d. | soap and cold water |

ANS: A PTS: 1

82. A cylinder must be measured for:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | wear | c. | wear and out of roundness |
| b. | out-of-roundness | d. | none are correct |

ANS: C PTS: 1

83. Which of the following can be used to measure the cylinder diameter?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | wire gauge | c. | feeler gauge |
| b. | cylinder tester | d. | telescoping gauge and outside micrometer |

ANS: D PTS: 1

84. Which of the following can be used to measure the cylinder diameter?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | outside micrometer | c. | cylinder meter |
| b. | inside micrometer | d. | round gauge |

ANS: B PTS: 1

85. How many measurements should be taken in a cylinder when checking for normal wear?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 2 | c. | 6 |
| b. | 4 | d. | 8 |

ANS: C PTS: 1

86. Worn cylinders will have a narrow, unworn portion at the very top called a:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | ridge | c. | land |
| b. | cap | d. | taper |

ANS: A PTS: 1

87. What causes cylinders to have a narrow, unworn portion at the very top?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | the top of the cylinder being made out of a different type of metal | c. | less heat at the top |
| b. | the top piston ring not reaching all the way to the top | d. | the top of the cylinder having the capability to expand and contract |

ANS: B PTS: 1

88. What is the correct name of the tool that is used to remove the narrow, unworn portion at the top of the cylinder?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | cylinder hone | c. | cylinder cutting tool |
| b. | lapping tool | d. | ridge reamer |

ANS: D PTS: 1

89. On Briggs & Stratton engines it is recommended that cylinders be resized when the bore is more than \_\_\_\_\_\_\_\_ oversize.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | .001 inch | c. | .006 inch |
| b. | .003 inch | d. | .009 inch |

ANS: B PTS: 1

90. On Briggs & Stratton engines it is recommended that aluminum cylinders be resized when the bore is more than \_\_\_\_\_\_\_\_ out of round.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | .003” | c. | .009” |
| b. | .006” | d. | .010” |

ANS: A PTS: 1

91. According to the Briggs & Stratton repair manual, if the cylinder has to be resized, always resize it to exactly \_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, or \_\_\_\_\_\_\_\_ over the standard bore size so that the stock oversize piston and rings will fit correctly.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | .001”, .002”, .003” | c. | .010”, .020”, .030” |
| b. | .002”, .003”, .004” | d. | .020”, .030”, .040” |

ANS: C PTS: 1

92. Which of the following is responsible for keeping all engine parts in alignment?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | connecting rod | c. | cylinder block |
| b. | flywheel | d. | crankshaft |

ANS: C PTS: 1

93. Which part of the cylinder block helps to cool the engine?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | flywheel | c. | oil |
| b. | metal fins | d. | cylinder head |

ANS: B PTS: 1

94. Which of the following **is** part of the cylinder block?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | valve face | c. | cylinder head |
| b. | cylinder | d. | gas tank |

ANS: B PTS: 1

95. Cylinder blocks can be made of:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | aluminum | c. | aluminum and cast iron |
| b. | cast iron | d. | none are correct |

ANS: C PTS: 1

96. Aluminum cylinder blocks have a/an \_\_\_\_\_\_\_\_ sleeve inside the cylinder.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | tapered | c. | cast iron |
| b. | aluminum | d. | steel |

ANS: D PTS: 1

97. An advantage of aluminum cylinder blocks over cast iron is:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | they have a better air to fuel ratio | c. | they are heavier |
| b. | they have a better compression ratio | d. | they are lighter weight |

ANS: D PTS: 1

98. An advantage of aluminum cylinder blocks over cast iron is:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | less maintenance | c. | they have the ability to dissipate heat rapidly |
| b. | they stay cleaner | d. | they will hold up longer |

ANS: C PTS: 1

99. An advantage of aluminum cylinder blocks over cast iron is:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | they cost less | c. | they use less oil |
| b. | they hold up longer in cold weather | d. | they can be left outside |

ANS: A PTS: 1

100. The flywheel shroud is used for:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | safety | c. | engine speed control |
| b. | noise control | d. | air speed control |

ANS: A PTS: 1

101. The flywheel shroud is used for:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | controlling the governor | c. | cooling the engine |
| b. | balancing the engine | d. | controlling the throttle |

ANS: C PTS: 1

102. Air cooled engines should be kept clean to avoid:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | excessive oil consumption | c. | engine aeration |
| b. | overheating | d. | all are correct |

ANS: B PTS: 1

103. Water is \_\_\_\_\_\_\_\_ times more effective than air for cooling the engine.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | two | c. | five |
| b. | four | d. | six |

ANS: B PTS: 1

104. The efficiency and life of an engine depends on:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | carburetor adjustment | c. | valve timing |
| b. | spark plug gap | d. | cooling |

ANS: D PTS: 1

105. Cylinders of water-cooled engines are surrounded by:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a water tank | c. | water housing |
| b. | a water jacket | d. | water pipes |

ANS: B PTS: 1

106. Water \_\_\_\_\_\_\_\_ are used to circulate the water through the water jackets on water-cooled engines.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | tanks | c. | pumps |
| b. | pipes | d. | lines |

ANS: C PTS: 1

107. The average temperature inside the combustion chamber of an air-cooled engine is about:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 10,000 degrees F | c. | 4,600 degrees F |
| b. | 8,500 degrees F | d. | 3,600 degrees F |

ANS: D PTS: 1

108. Heat that reaches the cooling fins is carried away by:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | conduction | c. | convection |
| b. | radiation | d. | hydra-vection |

ANS: C PTS: 1

109. About \_\_\_\_\_\_\_\_ of the heat from the engine is carried away by the cooling system.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 1/3 | c. | 2/3 |
| b. | 1/2 | d. | 3/4 |

ANS: A PTS: 1

110. If the exhaust is partially restricted, engine temperature will:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | decrease | c. | not change |
| b. | increase | d. | none are correct |

ANS: B PTS: 1

111. The flywheel on an air-cooled engine has fins which blows air around the engine \_\_\_\_\_\_\_\_\_\_\_\_ and cooling fins.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | cylinder wall | c. | housing |
| b. | crankcase | d. | shroud |

ANS: A PTS: 1

112. Cooling fins are necessary on:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | water cooled engines | c. | jet cooled engines |
| b. | air cooled engines | d. | hydro cooled engines |

ANS: B PTS: 1

113. Which of the following tools would be used to install piston rings?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | piston ring compressor | c. | piston ring expander |
| b. | piston ring tightner | d. | piston ring wrench |

ANS: C PTS: 1

114. Which of the following tools would be used to install the piston and rings into the cylinder?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | piston ring compressor | c. | piston socket |
| b. | cylinder installer | d. | squeeze compressor |

ANS: A PTS: 1

115. Which of the following tools would be used to rub the valve face together with the valve seat using a grinding compound for the purpose of seating the valves?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | drill | c. | valve seater |
| b. | valve refacer | d. | lapping stick |

ANS: D PTS: 1

116. Fuel is atomized for the purpose of:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | slow burning | c. | slow expansion |
| b. | rapid burning | d. | all are correct |

ANS: B PTS: 1

117. Which type fuel should be used in small gasoline engines?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | regular | c. | kerosene |
| b. | leaded | d. | diesel |

ANS: A PTS: 1

118. Fuel used in small gasoline engines should not be less than \_\_\_\_\_ octane.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 93 | c. | 87 |
| b. | 91 | d. | 77 |

ANS: D PTS: 1

119. The purpose of vent holes in the gas tank cap is to:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | allow for better compression in the cylinder | c. | allow air to enter for easier gas flow |
| b. | allow fuel to stay fresher longer | d. | they have no purpose at all |

ANS: C PTS: 1

120. Gasoline should be purchased in small quantities that can be used up in \_\_\_\_\_ days.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 10 | c. | 60 |
| b. | 30 | d. | 90 |

ANS: B PTS: 1

121. \_\_\_\_\_\_\_\_\_\_\_\_ gasolines are recommended for use in hot climates.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Cheap | c. | Low octane |
| b. | Regular grade | d. | Premium |

ANS: D PTS: 1

122. Gasoline that has been stored for prolonged periods of time \_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | become stabile | c. | become explosive |
| b. | become stale | d. | can still be used |

ANS: B PTS: 1

123. If gasoline is to be stored for prolonged periods of time, a \_\_\_\_\_\_\_\_\_\_\_\_ can be added to keep it fresh.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | fuel additive | c. | fuel stabilizer |
| b. | fresh gallon | d. | fuel liquifer |

ANS: C PTS: 1

124. Which two types of engines represent two-cylce engines?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Cross Scavenged and Loop Scavenged | c. | Cross Scavenged and Rotary Loop |
| b. | Cross Looped and Reed Scavenged | d. | Cross Scavenged and Loop Reed Scavenged |

ANS: A PTS: 1

125. Cross Scavenged two-cycle engines use a \_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | stem valve | c. | reed valve |
| b. | poppet valve | d. | they do not have valves |

ANS: C PTS: 1

126. Loop Scavenged two-cycle engines use \_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | reed valves | c. | poppet valves |
| b. | ports | d. | rotary valves |

ANS: B PTS: 1

127. Which two strokes occur at the same time in a two-cylce engine?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | intake and compression | c. | intake and exhaust |
| b. | intake and power | d. | compression and power |

ANS: A PTS: 1

128. What opens the reed valve in a two-cycle engine?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a switch | c. | a tappet |
| b. | a vacuum that is created by the upward movement of the piston | d. | the pressure of the fuel and oil mix |

ANS: B PTS: 1

129. What closes the reed valve in a two-cycle engine?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | a switch | c. | a tappet |
| b. | a vacuum created by the piston | d. | the springiness of the metal and the downward force of the piston |

ANS: D PTS: 1

130. The \_\_\_\_\_\_\_\_\_\_\_\_ prevents the reed valve on a two cycle engine from opening too far and becoming permanently bent.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | reed bracket | c. | reed stop |
| b. | reed case | d. | reed brace |

ANS: C PTS: 1

131. What part of a two-cycle engine allows the fuel and oil mix to travel from the crankcase to the combustion chamber?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | intake port | c. | transfer port |
| b. | exhaust port | d. | reed valve |

ANS: C PTS: 1

132. Which of the following will **not** be found in a two-cycle engine?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | camshaft | c. | carburetor |
| b. | crankshaft | d. | flywheel |

ANS: A PTS: 1

133. Which of the following will **not** be found in a two-cycle engine?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | spark plug | c. | muffler |
| b. | tappets | d. | coil |

ANS: B PTS: 1

134. Which of the following will **not** be found in a two-cycle engine?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | cylinder block | c. | reed valves |
| b. | cylinder | d. | poppet valves |

ANS: D PTS: 1

135. If too much oil is mixed with the fuel for a two-cycle engine:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | incomplete combustion may occur | c. | fouling of the spark plug will occur |
| b. | rapid buildup of carbon will occur | d. | all are correct |

ANS: D PTS: 1

136. Which **is** true of two-cycle engines over four-cycle engines?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | they run hotter | c. | they require more maintenance |
| b. | they are heavier | d. | they run quiter |

ANS: A PTS: 1

137. Which **is** true of two-cycle engines over four-cycle engines?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | they can be used on automobiles | c. | they provide a lot of horspower |
| b. | they can be used at extreme angles | d. | they require more maintenance |

ANS: B PTS: 1

138. One difference between a two-cycle engine and a four-cycle engine is that the:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | two-cycle engines have an oil filler plug. | c. | two-cycle engines have the muffler mounted nearly at the engine’s cylinder head |
| b. | four-cycle engines have an oil filler plug. | d. | four-cycle engines mix gas and oil together in the gas tank. |

ANS: B PTS: 1

139. On a loop scavenged two-cycle engine, exhaust back pressure keeps the:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | exhaust gases from exiting through the exhaust | c. | fuel mixture from exiting through the exhaust |
| b. | exhaust gases from exiting through the intake | d. | fuel mixture from entering through the exhaust |

ANS: C PTS: 1

140. What type piston does loop scavenged two-cycle engines have?

|  |  |  |  |
| --- | --- | --- | --- |
| a. | flat or slightly domed | c. | v-shaped |
| b. | wedge shaped | d. | raised baffle |

ANS: A PTS: 1

141. The cross scavenged two-cycle engine requires a piston with a:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | flat top | c. | dome shape |
| b. | wedge shape | d. | raised baffle |

ANS: D PTS: 1

142. The purpose of the baffle on the piston of a two-cycle engine is to:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | direct the flow of fuel-oil mixture evenly to the cylinder walls | c. | create a turbulent flow of gases |
| b. | direct the flow of fuel-oil mixture upward in the cylinder | d. | slow down the fuel-oil mixture entering the combustion chamber |

ANS: B PTS: 1

143. In a two-cycle engine the oil is placed in the:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | crankcase | c. | fuel |
| b. | oil sump | d. | none are correct |

ANS: C PTS: 1

144. Fuel consumption is \_\_\_\_\_\_\_\_ in a two-cylce engine than a four-cycle engine.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | more | c. | same |
| b. | less | d. | no way to tell |

ANS: A PTS: 1

145. It takes \_\_\_\_\_\_\_\_ revolution(s) of the crankshaft to complete one cycle in a two-cycle engine.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | one | c. | three |
| b. | two | d. | four |

ANS: A PTS: 1

146. A two-cycle engine accelerates \_\_\_\_\_\_\_\_ than a four-cylce engine.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | slower | c. | they accelerate at the same speed |
| b. | faster | d. | there is no way to tell |

ANS: B PTS: 1

147. Special additives for two-cycle oils are used to:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | prevent clogged exhaust ports | c. | prevent spark plug fouling |
| b. | prevent unburned deposits | d. | all of the above |

ANS: D PTS: 1

148. 40:1 is an example of a(an) \_\_\_\_\_\_\_\_\_\_ ratio for a two-cycle engine.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | compression | c. | fuel to oil |
| b. | fuel to air | d. | oil to fuel |

ANS: C PTS: 1

149. If 2 gallons of fuel are going to be mixed for a two-cycle engine requiring a 50:1 ratio, the amount of two-cycle engine oil that should be mixed is:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 2 oz | c. | 100 oz |
| b. | 5 oz | d. | 5 gallons |

ANS: B PTS: 1

150. If 1 gallon of fuel is going to be mixed for a two-cycle engine requiring a 40:1 ratio, the amount of two-cycle engine oil that should be mixed is:

|  |  |  |  |
| --- | --- | --- | --- |
| a. | 40 oz | c. | 6.4 oz |
| b. | 20 oz | d. | 3.2 oz |

ANS: D PTS: 1