Name:_____ Date:_____
Instructor:_____ Period:_____

65 Tires, Wheels, & Wheel Bearings

Objective: After studying this chapter, you will be able to explain tire, wheel bearing, and hub construction and operation.

Tires

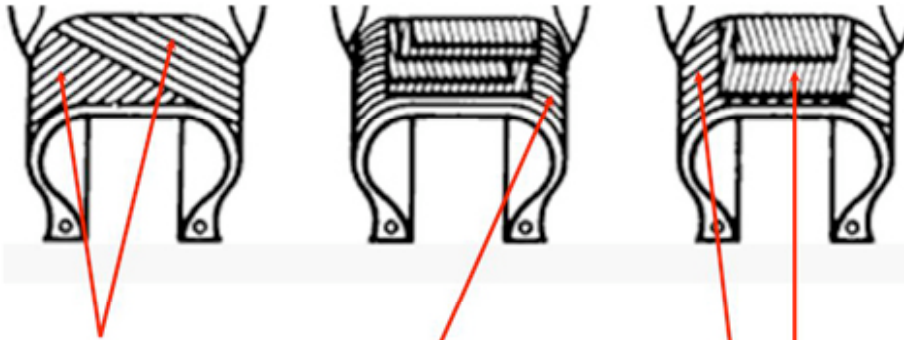
1. List the three (3) primary forces a tire must exert on the road surface:
   A. _____B. _____C. _____
2. When a tool operated with air, or tire is filled with air, they are called _____.
3. Describe the six (6) basic parts of a **tire**:
   Beads._____
   Belts._____
   Body Plies._____
   Liner._____
   Sidewall._____
   Tread._____
4. Describe **Radial Tire Footprint** and why it is important:_____
   _____ .

Match the best term to the correct description:

Belted bias tire
Bias ply tire
Radial ply tire

5. This tire design has belts and plies running at different angles:
   _____
6. Plies run angular from bead to bead, angle is reversed from ply to ply:_____
7. Plies run straight across from bead to bead, stabilizer belts lie directly beneath the tread:_____
8. The two (2) common tire sizing designations found on a tire sidewall are:
   _____ and_____
9. P-Metric tire sizing is the most common designation used on today's tires. What do the sizing notations P155/80R16 mean?
   P:_____
   155:_____
   80:_____
   R:_____
   16:_____

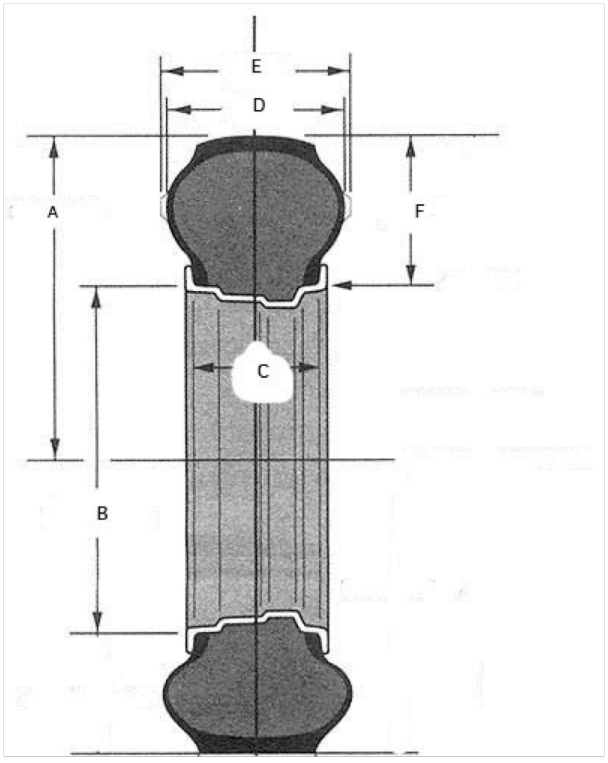
10. Identify the tire construction types shown:



A._____ B._____ C._____

11. The number **55** in the tire size P205/**55**R17 is known as the _____ ratio and is a ratio of the tire's _____ to its _____ .

12. Identify the designated measurement points:



A._____

B._____

C._____

D._____

E._____

F._____

13. The amount of weight a tire can carry at its recommended inflation pressure is called the _____ rating.

14. Most automobile tires have a maximum inflation pressure of _____ psi.

15. A higher ply rating or a greater number of plies a tire has allows a tire to carry _____ weight.
16. Why is the **DOT** rating on a tire important?_____
_____
17. A high **Tread Wear** rating number means the tire has a _____ high/low resistance to wear.
18. Which tire rating would indicate the ***lowest*** or ***least*** traction?_____
19. What is a tire's **Speed Rating**?_____
20. What is the purpose of a tire's **Wear Bars**?_____
_____
21. What is the most typical **spare tire** used on today's automobiles?_____
22. The spare tire on most modern automobiles is meant for _____ use.
23. How do **Self-Sealing** tires work?_____
24. What type or class of vehicles would use **Re-Tread** tires?_____
25. A class of tire with **extremely stiff sidewalls** are called _____ tires.
26. Explain the **Tire Monitoring System**:_____
_____
_____

Wheels

27. Automotive wheels can be made from at least three (3) different materials:_____
_____
28. Describe a **Drop-Center Wheel**:_____
_____
29. A **Safety Rim** has two _____ the help to hold the tire beads in place.
30. What is the difference between a **Blow-out** and a **Flat**?_____
_____

Valve Stems & Cores

31. A rubber valve stem can be pressed through a hole in a wheel and a metal stem is secured with a nut threaded on from the outside. What is the purpose of the valve stem?_____
32. The spring-loaded valve inside the stem is called the valve _____ .
33. What does the spring-loaded valve do when the tire inflator is removed from the stem?_____
34. Why are **valve stem caps** important?_____

Lug Nuts, Studs, & Bolts

35. Why is the inner face of a lug nut tapered?_____
_____
36. Lug studs are special fasteners made to accept _____ _____ .
37. Why are wheel weights important?_____
_____

Hub & Wheel Bearing Assemblies

38. List the three basic parts of a wheel bearing:_____

_____

39. Describe the following parts of a nondriving hub assembly:

Spindle:_____

Wheel Bearings:_____

Hub:_____

Grease Seal:_____

Safety Washer:_____

Spindle Adjusting Nut:_____

Nut Lock:_____

Cotter Pin:_____

Dust Cap:_____

40. Describe the following basic parts of a drive hub & bearing assembly:

Outer Drive Axle:_____

_____

Ball or Roller Bearings:_____

_____

Steering Knuckle:_____

_____

Drive Hub:_____

_____

Axle Washer:_____

_____

Hub or Axle Locknut:_____

_____

Grease Seal:_____

_____