

Automatics Questions

NAME:

Theory

Using the information located in i:\wellwood\mechanics\automatics.html, the internet, your brain, and other sources to answer the following questions.

1. In an automatic transmission, the "clutch" is replaced by a "fluid coupler." Describe in your own words how a *basic* fluid coupler works:
2. A Torque Converter was a significant improvement over the Fluid Coupler. What was the main reason why it was better?
3. Watch the VIDEO on THE TORQUE CONVERTER. Describe using your own words how a Torque Converter works:

4. List the four main structural components of a common automatic transmission:

a.

b.

c.

d.

5. Describe using your own words the purpose of the following parts:

a. Impeller:

b. Turbine:

c. Stator:

6. Describe using your own words the six components in the Valve Body:

a. Pressure Regulator:

b. Manual Valve:

c. Vacuum Modulator Valve:

- d. Governor Valve:

 - e. Shift Valves:

 - f. Kickdown Valve:
7. Watch the VIDEO: SIMPLE GEAR SETS, and describe how to get the following out of a planetary gear set:
- a. Low Gear:

 - b. Direct Drive:

 - c. Reverse:
8. How are bands applied?
9. How are clutches applied?
10. How does your vehicle stay still when it is in "Park?"
11. Describe using your own words the difference between Type F and Dexron transmission oil

12. Chrysler & Jeep Transmission fluid levels are checked a bit differently than virtually everyone else. How so?

13. Describe using your own words how a spool valve is used to control two different hydraulic circuits

14. A common three-speed automatic transmission has six positions on the Manual Valve. Sketch a picture of what the manual valve would look like, including the ports to the various hydraulic control systems (you do not have to draw the hydraulic control systems)

15. Describe using your own words how a governor is used to control shifts

16. Describe using your own words how a vacuum modulator is used to control shifts

17. There are three clutches and two bands used in a common three-speed automatic transmission. Using a chart of clutch and band application, determine the most likely cause of the problem listed below:
 - a. Transmission does not move in Drive Low, but does move in Manual Low

 - b. Transmission does not move in Reverse, other gears are fine

- c. Transmission does not have High gear or Reverse

- d. Transmission has no forward gears

18. With respect to the application of clutches and bands, what is the only difference between first gear (low) and second gear?

19. Match (draw lines) the following clutches and bands from the picture with the names given in the i:\ text by their description

- | | |
|-----------------|------------------------|
| a. Front Band | 1. Forward Clutch |
| b. Rear Band | 2. Intermediate Band |
| c. Front Clutch | 3. Low-Reverse Band |
| d. Rear Clutch | 4. High-Reverse Clutch |

20. What are the two biggest advantages to a shift kit?

- a.

- b.

21. What is one disadvantage to a shift kit?

22. Describe using your own words how a Continuously Variable Transmission works