

Automatic Transmissions / Transaxles

Chapter 5 Review Questions

Instructions: Choose the most correct answer and put your answers on a scantron answer sheet.

1. Technician A says the turbine is attached to the transmission input shaft. Technician B says the turbine is attached to the converter housing and rotates at engine speed. Who is right?
 - A. Technician A only
 - B. Technician B only
 - C. Both A and B
 - D. Neither A nor B
2. The torque converter impeller is driven by:
 - A. the turbine
 - B. the stator
 - C. fluid pressure
 - D. the engine crankshaft
3. The difference between a torque converter and a fluid coupler is:
 - A. the absence of torque multiplication.
 - B. the absence of a stator.
 - C. the absence of a one way clutch.
 - D. All of the above are correct.
4. Technician A says the impeller fluid strikes the turbine vanes and cause it to turn in the same direction as the converter housing. Technician B says the impeller vanes pick up fluid and force it in toward the center of the turbine. Who is right?
 - A. Technician A only
 - B. Technician B only
 - C. Both A and B
 - D. Neither A nor B
5. The fluid in a torque can flow in _____.
 - A. rotary flow only
 - B. vortex flow only
 - C. vortex and rotary flow but not at the same time.
 - D. vortex and rotary flow at the same time.
6. Technician A says the split guide ring is used to limit fluid turbulence. Technician B says turbulence occurs when the impeller and turbine turn at considerable different speeds. Who is right?
 - A. Technician A only
 - B. Technician B only
 - C. Both A and B
 - D. Neither A nor B
7. Torque converter speed ratio is:
 - A. a measurement of coupling efficiency.
 - B. most efficient at 100% speed ratio.
 - C. most efficient at 0% speed ratio.
 - D. Both A and B are correct.
 - E. Both A and C are correct.
8. The disadvantage of a fluid coupler is that it cannot multiply engine torque.
 - A. True
 - B. False

9. Two technicians are discussing torque converter vortex fluid flow. Technician A says maximum vortex flow occurs at steady freeway speeds around 65 mph. Technician B says maximum vortex flow occurs at converter stall speed with zero percent speed ratio. Who is right?
- Technician A only
 - Technician B only
 - Both A and B
 - Neither A nor B
10. The stator in the torque converter is:
- the drive member.
 - the driven member.
 - the reaction member.
 - the idler member.
11. Choose the statement that is **INCORRECT**.
- The stator vanes must rotate freely in both directions.
 - The stator vanes are mounted onto a one way clutch.
 - The converter housing drives the transmission oil pump at engine speed.
 - The converter capacity effects the converter stall speed.
12. Technician A says at approximately 90% speed ratio the converter is at near maximum torque multiplication as it moves into the coupling phase. Technician B says during the coupling phase the stator locks up and fluid flow is mostly vortex. Who is right?
- Technician A only
 - Technician B only
 - Both A and B
 - Neither A nor B
13. Low capacity torque converters will be very efficient and have a low stall speed.
- True
 - False
14. Maximum rotary fluid flow in a converter occurs:
- at a low speed ratio.
 - at a 90% or greater speed ratio.
 - just before the coupling phase.
 - during stator lockup.
15. Technician A says that all torque converters at maximum efficiency will slip between 3% to 6%. Technician B says the Tech A is stuck in the pre 1970's era and all modern day torque converters use a lockup mechanism to eliminate the 3% to 6% slippage for maximum efficiency. Who is right?
- Technician A only
 - Technician B only
 - Both A and B
 - Neither A nor B
16. Two technicians are discussing torque converter stator blade angles. Technician A says that a converter with a sharp angle will be more efficient and have a lower stall speed. Technician B says that a stator with very little blade angle will produce a high stall speed and couple at higher engine RPM's. Who is right?
- Technician A only
 - Technician B only
 - Both A and B
 - Neither A nor B
17. The lockup torque converter:
- Has a lockup piston connected to the impeller
 - Has a lockup piston connected to the turbine
 - Has a lockup piston connected to the stator
 - Has a lockup piston connected to the converter housing.

18. When a lockup torque converter is in the lockup mode of operation:

- A. the turbine and the converter housing rotate at the same speed.
- B. no power or torque is transferred through the fluid.
- C. the transmission input shaft is rotating at engine rpm speed.
- D. All of these answers are correct.

19. All torque converter lockup clutches eliminate all converter slippage.

- A. True
- B. False

20. If the engine is rotating at 2,800 rpm's and the transmission input shaft is rotating at 560 rpm's what is the torque converter speed ratio? What phase is the converter in? (torque or coupling) Is the stator locked or free spinning? Is the fluid in vortex or rotary flow?
