Automotive Steering, Suspension, and Alignment, 8th Edition
Chapter 12

Name_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1) What type of vehicles use two dry clutches?

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2) What sensors are used in a typical dual clutch automatic transaxle?

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3) What are the benefits of using a dual-clutch automatic compared to a conventional automatic?

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4) How is a shift made from first to second on a dual clutch automatic transmission?

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5) What are the disadvantages of a dual clutch automatic transmission?

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6) What are the two designs of wet clutches?

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1) Dual dry clutches are used in low powered vehicles such as small front-wheel-drive vehicles.
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2) The sensors used in a typical dual clutch automatic transaxle include:
- Speed sensors
- Temperature sensors
- Pressure sensors
- Position sensors

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3) The advantages of a dual clutch automatic transmission/transaxle compared to a conventional Automatic transmission includes:
- Quicker throttle response
- No drop in engine speed when the driver releases the throttle
- Instant gear changes
- Improved fuel economy

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4) The shift from first to second includes the following actions:
STEP 1 Clutch 1 is on and drives the inner shaft.
STEP 2 Second gear control device is pressurized to get ready to shift to second gear.
STEP 3 Clutch 2 is starting to be filled with hydraulic pressure (both clutches work at the same time during shifting).
STEP 4 First gear torque delivery through clutch 1 is being reduced as clutch 2 in being applied and starting to transmit engine torque.
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5) The disadvantages of a dual clutch automatic transmission/transaxle compared to conventional or continuously variable automatic transmissions include:
- No torque multiplication advantage of a torque converter
- Not as fuel efficient as a continuously variable transmission (CVT) or transaxle

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6) • A concentric clutch (also called a nested-type clutch) is a design where both plates share the same vertical plane and provides a shorter assembly.
- A parallel clutch design is used in a side-by-side arrangement.

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