Automatic Transmissions and Transaxles 7th Edition Chapter 4

Name_____

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

1) What is the purpose of an accumulator?

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2) What is used to measure vehicle speed in a hydraulically controlled automatic transmission?

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3) What is the difference between a synchronous and an asynchronous transmission?

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4) What are the component names used that control mainline pressure in an electronically-controlled automatic transmission/transaxle?

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5) What is a pulse-width modulated solenoid?

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6) What is used to measure engine load in a hydraulically controlled automatic transmission?

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1) An accumulator is tied hydraulically to a clutch or band servo, and absorbs fluid during the pressure build-up stage when a clutch or band applies. This has the effect of slowing the pressure increase and lengthening the time it takes for the friction device to complete the shift.
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2) The governor is connected to the output shaft and regulates hydraulic pressure based on vehicle speed. As the vehicle speed (output shaft) increases, centrifugal forces a pair of weights against pull- back springs.
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3) Some transmissions are designed to apply a clutch or a band without having to release another one. These are called nonsynchronous or asynchronous transmissions. Synchronous transmissions require a clutch or band to release during the clutch or band apply for the next gear range, and these must be carefully synchronized.
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4) Electronic automatic transmissions/transaxles regulate hydraulic system pressure using a pressure control solenoid (PCS) that may also be called:
   - Electronic pressure control (EPC)
   - Pressure control (PC)
   - Variable force solenoid (VFS)
   - Force motor

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5) Some automatic transmission solenoids are pulse-width modulated (PWM), which means that they are energized at a fixed rate (frequency) the amount of time it is "on" is controlled by the PCM/TCM. The ratio of on/off time is called the duty cycle and ranges from 0% (completely de- energized) to 100% (fully energized).
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6) There are two types of devices that serve the purpose of monitoring the engine load and just one of the following is used, not both:
   - Throttle Valve (TV)
   - Vacuum Modulator

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