Automotive Engine Performance, 5th Edition
Chapter 20

Name_____

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

1) How does a typical NTC temperature sensor work?

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2) What is the difference between a stepped and a non-stepped ECT circuit?

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3) What temperature should be displayed on a scan tool if the ECT sensor is unplugged with the key on, engine off?

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4) If the transmission fluid temperature (TFT) sensor were to fail open (as if it were unplugged), what would the PCM do to the transmission shifting points?

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5) What are the three ways that temperature sensors can be tested?

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1) A typical NTC sensor decreases in resistance as the temperature increases. In other words, it becomes more electrically conductive as the temperature increases.
Page Ref: 333
2) A stepped ECT circuit uses a pull-up resistor inside the PCM to give the ECT a broader, more accurate reading of the coolant temperature. A non-stepped ETC sensor does not have this pull-up resistor.
Page Ref: 333
3) If the ECT is unplugged, a scan tool will display —40°F (—40°C).
Page Ref: 339
4) If the TFT sensor were to fail open, the automatic transmission would likely have the shift points delayed to help assist in the heating of the fluid.
Page Ref: 342
5) Temperature sensors can be tested by visual inspection, resistance, and by using a scan tool to monitor the operation (reading) of the sensor as the engine operates.
Page Ref: 334; 338