1. What slip coefficients for Class A and Class B surfaces, respectively, are recognized by the 2010 AISC Specification?
   a) 0.20 and 0.40  
   b) 0.30 and 0.50  
   c) 0.33 and 0.50  
   d) 0.35 and 0.50

2. True/False: The minimum radius for bent plates differs depending on whether the bend is perpendicular to or parallel to the direction of final rolling.

3. True/False: When determining the torsional capacity of a weld around the perimeter of a round HSS, an “Mc over I” approach can be used.

4. True/False: All moment frame connections in seismic lateral force resisting systems must be prequalified per ANSI/AISC 341-10.

5. True/False: Castellated and cellular beams are proprietary systems within the United States.

6. What is the maximum thickness of fillers that is permitted in bolted connections without having to address the presence of the fillers?
   a) ⅛ in.  
   b) ⅛ in.  
   c) ⅛ in.  
   d) ¼ in.

7. True/False: A bracing member must have both sufficient strength and stiffness in order to provide a braced point to a column, beam or beam-column.

8. True/False: The only applicable limit state for rods with threaded ends that are subjected only to tension is the tensile strength of the threaded end as given in AISC Specification Section J3.6.

9. True/False: The 14th Edition AISC Steel Construction Manual is available in which of the following formats?
   a) Electronic format  
   b) Print format  
   c) On a DVD  
   d) Both A and B

10. True/False: AISC 360-10 Chapter N, “Quality Control and Quality Assurance,” includes inspector qualifications, responsibilities, inspection tasks and frequencies.

Many of the answers to this month’s steel quiz can be found in the AISC Specification, Seismic Provisions and Prequalified Connections, all of which are available as free downloads at www.aisc.org/epubs.
1. (b) Two surface classes, Class A and Class B, are recognized by the AISC Specification, ANSI/AISC 360-10, and correspond to slip coefficients of 0.30 and 0.50 respectively. This is discussed in Section J3.8 of the Specification. The slip coefficient for Class A surfaces has been reduced from that found in the 2005 Specification based on recent research that shows a greater variation than previously considered in the performance of mill-scale surfaces.

2. True. Table 10-13 in the 14th Edition AISC Steel Construction Manual provides this information. The values shown in the table are based on bend lines perpendicular to the final rolling direction. However, footnote 1 states that when bend lines are parallel to the final rolling direction, the values in the table should be multiplied by 1.5. The principle is that you can achieve a tighter bend when the bend line is perpendicular to the final rolling direction.

3. True. The 14th Edition Manual gives guidance on this matter on pages 8-12 and 8-13. If the torque is represented by the symbol $M_t$ and the radius of the weld group is $R$, the shear per linear inch of weld, $r_m$, is given by $r_m = M_t / \pi R^3$, where $l_y = l_y + l_z = 2\pi R^3$. With this formulation, $r_m$ is the shear per linear inch of weld around the complete perimeter.

4. False. $R=3$ moment connections and those in Ordinary Moment Frames do not need to be prequalified. Intermediate and Special Moment Frames are permitted using either connections prequalified in accordance with ANSI/AISC 358-10, Prequalified Connections, or ANSI/AISC 341-10, Seismic Provisions, Section K1, or connections qualified in accordance with Section K2 of the Seismic Provisions. For more information see ANSI/AISC 341-10, Sections E2.6 and E3.6.

5. False. These types of members are no longer proprietary in the U.S.

6. (d) AISC Specification Section J5.2 allows for fillers (or shims) up to ¼-in. thick without any reduction in bolt strength. Otherwise, one of the four requirements given in Section J5.2(a) through (d) must be satisfied to address the presence of thicker fillers.

7. True. Appendix 6 of the AISC Specification defines the requirements for bracing that is provided to stabilize individual columns, beams and beam-columns.

8. False. AISC Specification Section J3.6 is the appropriate section for determining the rupture strength of the threaded section of the rod. However, the unthreaded length of the rod also must be checked for yielding per AISC Specification Section D2.

9. (d) AISC has augmented its classic Steel Construction Manual with a Digital Edition. This Digital Edition is a secured PDF file of the entire Manual. To learn more about the 14th Edition Manual, or to purchase a copy of the Manual in either print or digital format (or both), go to www.aisc.org/manual14.

10. True. Chapter N provides a template to follow for inspection criteria for steel structures.