



1. In a moment frame the seismic shear in the beam is determined by
 - a. Statics, assuming the formation of plastic hinges at each end of the beam
 - b. The shear capacity of the beam

2. In a moment frame the column moment at the beam centerline is likely to be
 - a. Close to its maximum
 - b. Close to zero

3. Panel zone flexibility can be modeled by
 - a. Introducing rigid elements and rotational springs around the extents of the panel zone
 - b. Introducing a scissor element
 - c. Modeling beams and columns without rigid end offsets and allowing the added flexural flexibility to substitute for panel-zone flexibility
 - d. All of the above

4. In a moment frame the seismic shear in the columns is determined by
 - a. Statics, assuming the formation of plastic hinges at each end of the beam and inflection points at mid-height of the column
 - b. Statics, assuming the formation of plastic hinges at each the top and bottom of the column

5. Weld backing at the bottom flange is more problematic than at the top flange because
 - a. The unfused region of the backing is at the extreme fiber
 - b. Local bending of the flange increases tension at the extreme fiber when the bottom flange is in tension
 - c. Weld procedures at the bottom flange require stopping or starting in the joint due to web obstruction
 - d. The deck at the upper flange may slightly reduce demands on the weld
 - e. All of the above



Seismic Design in Steel

Quiz for Session 2: Seismic Design Concepts – Moment Frames – February 12, 2018

Due: March 5, 8:00 a.m. EST – Submit through the online form

6. In moment frame connections the plastic hinge location can be shifted away from the face of the column by
 - a. Reinforcing the beam at the face of the column
 - b. Adding continuity plates
 - c. Weakening the beam at the desired hinge location
 - d. A and C
 - e. None of the above

7. The preferred method of providing ductility in the moment frames is to
 - a. Promote yielding distributed to all columns in the same story
 - b. Promote shear yielding in the panel zones of the columns
 - c. Promote yielding near the ends of the beams on all stories

8. To check limit states such as panel zone shear, web local yielding, and web crippling, one should use
 - a. The moment demand at the plastic hinge location of the beam
 - b. The moment demand at the face of the column (extrapolated from the plastic hinge location)
 - c. The moment demand at the centerline of the column (extrapolated from the plastic hinge location)

9. One may not want to heavily rely upon the second term of the panel zone shear capacity, because
 - a. The axial loads are often very large for moment frame columns
 - b. The panel zone deformations are usually not modeled
 - c. To develop this portion of the capacity requires large panel zone deformations, and therefore may present performance issues

10. Which of the following weld-related practices is now common in the construction of moment frame connections for seismic design?
 - a. Backup bars are welded directly to the column or removed
 - b. Beam web is welded to the column
 - c. Beam flange groove welds undergo more than the typical level of inspection
 - d. Weld metal with greater toughness is required
 - e. All of the above

