Assignment 9

1. For a beam of rectangular cross-section of width b and depth d, the maximum stress occurs at the
   section where the depth to width ratio equals 1.0.
   a. 1.5
   b. 1.2
   c. 0.8
   d. 0.6

2. A simply supported beam of span 5 m and uniform load 15 kN/m is subjected to a concentrated load
   of 5 kN at its centre. The maximum deflection of the beam is:
   a. 15 kN
   b. 25 kN
   c. 35 kN
   d. 45 kN

3. The ratio of the maximum deflection of a beam of length L, simply supported at each end, to the
   equivalent deflection of a beam of the same length subjected to a uniformly distributed load of the
   same magnitude, is:
   a. 3
   b. 5
   c. 7
   d. 9

4. An I-section is subjected to an eccentric load. The vertical deflection of the free end and horizontal deflection
   of the support are:
   a. V, H
   b. 2V, 2H
   c. 3V, 3H
   d. 4V, 4H

5. The deflection at the free end of a cantilever beam of length L due to a moment M at the free end is:
   a. V, H
   b. M / EI
   c. M / EI
   d. M / EI

6. The ratio of the maximum deflection of a beam of length L, simply supported at the left end and loaded
   uniformly over the entire length, with a uniformly distributed load f, to the equivalent deflection of a
   beam of the same length subjected to a uniformly distributed load of the same magnitude, is:
   a. 3
   b. 5
   c. 7
   d. 9

7. An I-section beam subjected to a moment M at the free end. The deflection at the free end is:
   a. V, H
   b. M / EI
   c. M / EI
   d. M / EI

8. A simply supported beam of span 1 m and load 15 kN/m is subjected to a uniformly distributed load of
   10 kN/m over the entire length. The maximum bending moment is:
   a. 15 kN
   b. 25 kN
   c. 35 kN
   d. 45 kN

9. A beam of rectangular cross-section of width b and depth d, subjected to a uniformly distributed load
   of 10 kN/m, has a maximum stress at the section where the depth to width ratio equals 1.0.
   a. True
   b. False

10. A simply supported beam subjected to a uniformly distributed load of 10 kN/m over the entire length.
    The maximum deflection is:
    a. 10 kN
    b. 20 kN
    c. 30 kN
    d. 40 kN

11. Which of the sections of the I-beam shown in the figure below is the correct choice for a simply supported
    beam subjected to a uniformly distributed load of 10 kN/m over the entire length?
    a. I
    b. II
    c. III
    d. IV

12. A simply supported beam of span 5 m and load 15 kN/m is subjected to a uniformly distributed load of
    10 kN/m over the entire length. The maximum bending moment is:
    a. 15 kN
    b. 25 kN
    c. 35 kN
    d. 45 kN

13. The ratio of the maximum deflection of a beam of length L, simply supported at each end, to the
    equivalent deflection of a beam of the same length subjected to a uniformly distributed load of the
    same magnitude, is:
    a. 3
    b. 5
    c. 7
    d. 9