A simply supported wood beam of rectangular cross section carries a uniform load of intensity, \( w \) as shown in figure. The plane of symmetry of the beam is inclined to the plane of loading by an angle \( \alpha \) as shown. Assume Young’s modulus of the beam, \( E = 100 \text{ GPa} \), \( L = 4 \text{ m} \), \( w = 2 \text{ kN/m} \), \( b = 0.12 \text{ m} \), \( h = 0.2 \text{ m} \), and \( \alpha = 30 \text{ degrees} \). For this beam compute the following:

1) **Moment of inertia about \( z \) axis**, \( I_z = \) \( \_ \_ \_ \_ \_ \times 10^6 \text{ m}^4 \)

   No, the answer is incorrect.
   Score: 0

   Accepted Answers:
   (Type: Range) 67.1, 67.3

2) **Moment of inertia about \( y \) axis**, \( I_y = \) \( \_ \_ \_ \_ \_ \times 10^6 \text{ m}^4 \)

   No, the answer is incorrect.
   Score: 0

   Accepted Answers:
   (Type: Range) 41.5, 41.7

10 points
3) Product moment of inertia, \( I_y = \ldots \times 10^6 \text{ m}^4 \)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 22.1,22.3

4) Magnitude of the maximum bending normal stress = \ldots \text{ MPa}

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 8.4,8.6

5) Orientation of the neutral axis with respect to \( z \) axis = \ldots \text{ degrees}

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 57.9,58.1

6) Location of the maximum magnitude of the displacement from hinge support = \ldots \text{ m}

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numeric) 2

7) Magnitude of the displacement along \( y \) direction at mid span = \ldots \text{ mm}

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 1.1,1.3

8) Magnitude of the displacement along \( z \) direction at mid span = \ldots \text{ mm}

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 0.54,0.74

9) Magnitude of the rotation about \( z \) axis at the hinge support = \ldots \text{ degrees}
No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 0.054, 0.056

10 Magnitude of the rotation about y axis at the hinge support = ________ degrees

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 0.028, 0.03