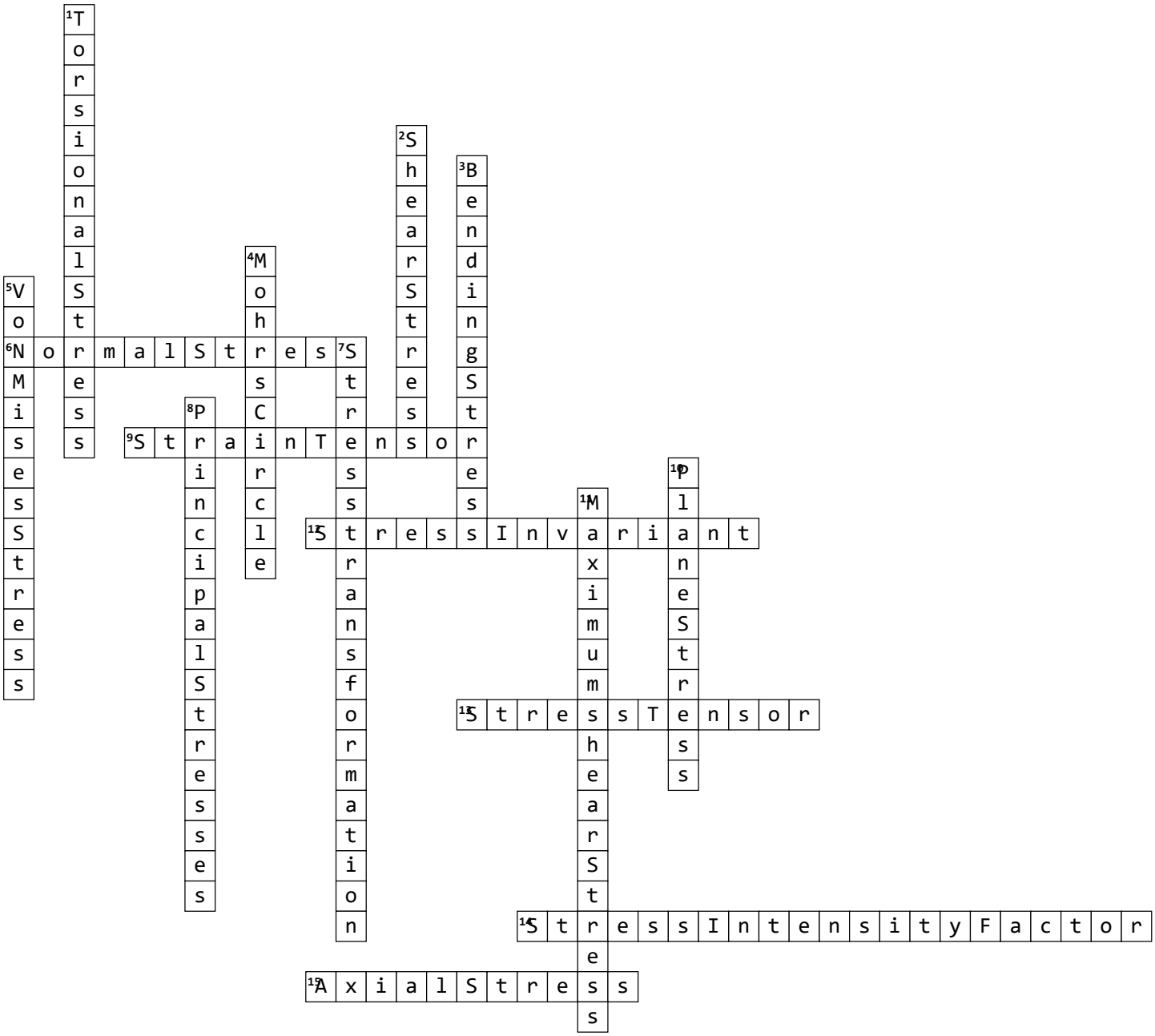
23AST201-Mechanics of Solids for Aerospace-Unit-5



Across

6. The component of stress perpendicular to a surface, affecting axial loads.

9. A mathematical representation of the deformation of a material in multiple directions.

12. Quantities derived from the stress tensor that remain unchanged under coordinate transformations.

13. A mathematical representation of the internal forces acting on a material in multiple directions.

14. A measure of the stress concentration at the tip of a crack, used in fracture mechanics.

Down

1. Stress resulting from twisting forces applied to a structural element.

2. The component of stress parallel to a surface, causing sliding between layers.

3. The stress experienced by a material due to bending forces, varying linearly across the cross-section.

4. A graphical method used to determine principal stresses and maximum shear stresses.

5. A scalar stress value used in ductile material failure theories, representing combined stress states.

15. Stress experienced along the length of a member, either tensile or compressive.

7. The process of converting stresses from one coordinate system to another to simplify analysis.

8. The maximum and minimum normal stresses at a point, occurring on orthogonal planes.

10. A condition where stresses are applied in two dimensions, typically in thin plates.

11. The greatest shear stress experienced at a point, used in failure criteria.