

5.12 Exercise Problems (4 Marks each).....5 - 52
 5.13 MSBTE Questions and Answers5 - 53

UNIT VI

Chapter 6 : Columns 6-1 to 6-24

Syllabus :

Concept of compression member, short column, long column, effective length, radius of gyration, slenderness ratio, type of end conditions for columns, buckling of axially loaded columns .

Euler’s theory, assumptions made in Euler’s theory and its limitations. Application of Euler’s equation to calculate buckling load.

Rankine’s formula and its application to calculate crippling load.

Concept of working load/safe load, design load and factor of safety.

6.1 Concept of Compression Member.....6 - 1
 6.2 Classification of Columns.....6 - 3
 6.2.1 Difference Between Short Column and Long Column.....6 - 3
 6.3 Euler’s Theory for Long Columns6 - 4

6.3.1 Application of Euler's Equation to Calculate Buckling Load.....6 - 4
 6.3.2 Limitations of Euler's Formula6 - 4
 6.4 Factor of Safety (F.O.S.)6 - 5
 6.5 Safe Load.....6 - 5
 6.6 Working Load.....6 - 5
 6.7 Design Load.....6 - 5
 6.8 Strength of Column OR Load Carrying Capacity of the Column6 - 5
 6.9 Solved Examples Based on Euler's Formula.....6 - 5
 6.10 Numericals Based on to Find Diameter of Section (Design of Section).....6 - 10
 6.11 Numericals Based on Finding $\lambda =$ Slenderness Ratio.....6 - 13
 6.12 Rankine's Formula for Column.....6 - 14
 6.13 Theory Questions (2 Marks each)6 - 23
 6.14 Exercise Problems (4 Marks each).....6 - 23
 6.15 MSBTE Questions and Answers6 - 24

- **Appendix - A : Solved University Question Paper of Winter 2019A-1 to A-10**

