



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai.

UNIT – I PROPERTIES OF MATTER

TOPIC – X QUESTION BANK

1. Describe with necessary theory, the method to determine the Young's modulus of the material of a rectangular bar by uniform bending. (or) Describe an experiment to determine the Young's modulus of a beam using bending of beams? (DEC 1995, JUNE 1989)
2. What is cantilever? Obtain expression for the depression at the free end of a cantilever when the other end is rigidly fixed (assume the weight of the cantilever is negligible). (MAY/JUNE 2014)
3. Derive an expression for the internal bending moment of a beam in terms of radius of curvature? (NOV 1998)
4. A circular and a square cantilever are made of same material and have equal area of cross-section and length. Find the ratio of their depressions for a given load. (DEC 1998)
5. Derive an expression for depression at the free end of a cantilever, due to load. Describe an experiment to determine the Young's modulus of the cantilever material using this expression. (NOV 2002)
6. Derive a differential equation (Second order) to describe the heat conduction along a uniform bar. Hence obtain the steady solution of it. (DEC 1997)
7. Obtain an expression for the quantity of heat conducted radially out of a hollow cylinder. Using this, explain how the thermal conductivity of rubber can be determined. (DEC 1997)
8. Derive an expression for the rectilinear flow of heat along an uniform bar (One dimensional flow of heat). (MAY/JUNE 2014, DEC 1998, NOV 2001)
9. Derive an expression for the quantity of heat flow through a metal slab whose faces are kept at two different temperatures. Use this expression to determine the thermal conductivity of a bad conductor by lee's disc method. (NOV 2002)
10. What is meant by radial flow method? Describe any one of the method to find the thermal conductivity of a bad conductor.
11. Explain in detail the conduction of heat through a compound media (Series and Parallel).