

ASSIGNMENT NO: 03

CONVENTIONAL QUESTIONS:

1. Write the Castigliano's first theorem.
2. Write the Castigliano's second theorem.
3. Write the energy theorems.

OBJECTIVE QUESTIONS

4. Internal deformation caused by real loads will be in a linear elastic member:-
 - a) $\frac{1}{4} NL/AE$
 - b) $\frac{1}{3} NL/AE$
 - c) $\frac{1}{2} NL/AE$
 - d) NL/AE
5. What will be the value of Δ in a member:-
 - a) $\Sigma \frac{1}{4} nNL/AE$
 - b) $\Sigma \frac{1}{3} nNL/AE$
 - c) $\Sigma \frac{1}{2} nNL/AE$
 - d) $\Sigma nNL/AE$
6. What is change in length of member if temperature increases by ΔT and expansion coefficient is α ?
 - a) $\frac{1}{4} \alpha \Delta TL$
 - b) $\frac{1}{3} \alpha \Delta TL$
 - c) $\frac{1}{2} \alpha \Delta TL$
 - d) $\alpha \Delta TL$
7. What is the unit of virtual unit load?
 - a) N
 - b) Lb
 - c) kip
 - d) Anything
8. This theorem is applicable when temperature is varying. State whether the above sentence is true or false.
 - a) True
 - b) False
9. In which of the following cases, is this theorem applicable?
 - a) Yielding support, non-linear elastic material
 - b) Non-yielding support, linear elastic material
 - c) Yielding support, linear elastic material
 - d) Non-yielding support, non-linear elastic material
10. If any of the external forces acting increases, then internal energy would:-
 - a) Decrease
 - b) Increase
 - c) Not change
 - d) Become -ve