Unit 3 - Week 2

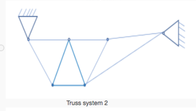
Assignment 2

The due date for submitting this assignment has passed. **Due on 2020-02-12, 23:59 IST.**

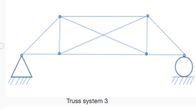
Assignment submitted on 2020-02-06, 11:00 IST

1) Which one of the following truss system is stable and statically indeterminate with internal redundancy? (One or more than one options may be correct) *1 point*

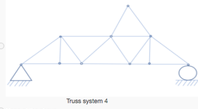
Truss system 1



Truss system 2



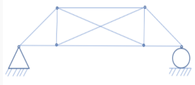
Truss system 3



Truss system 4

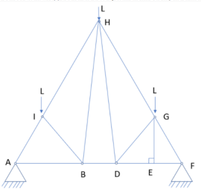
None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:



Truss system 3

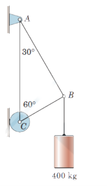
2) Choose correct alternative(s) true for the truss system shown below.(One or more than one options may be correct) *1 point*



The system is stable
The system is unstable
Link BH is a redundant link
Link EG is a redundant link
The system is statically determinate
The system is statically indeterminate

Partially Correct.
Score: 0.33
Accepted Answers:
The system is stable
Link EG is a redundant link
The system is statically indeterminate

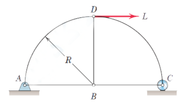
3) Find the force in member AC of the loaded truss.(take g=10 m/s^2) *1 point*



4000 N tension
4000 N compression
1000 N tension
1000 N compression
2000 N compression

Yes, the answer is correct.
Score: 1
Accepted Answers:
1000 N tension

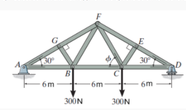
4) Which of the following alternative(s) is/are true for the following truss system?(One or more than one options may be correct) *2 points*



The structure has an internal redundancy
Member BD will never fail irrespective of the value of the load L applied
Member AB is under tension with load L/2
Member AB is under compression with load L/2
If the curvatures of the member AD and member CD are changed, it will affect the load experienced by the other members

Partially Correct.
Score: 1
Accepted Answers:
Member BD will never fail irrespective of the value of the load L applied
Member AB is under tension with load L/2

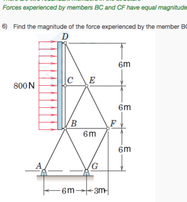
5) Select correct alternative(s) from the options below for the following system.(One or more than one options may be correct) *2 points*



Δ BCF is an equilateral triangle
There are two redundant members in the structure
Forces experienced by members BC and CF have equal magnitude and are tensile in nature
Member EF is under tensile load of magnitude 600 N
Replacing the pinned support at A with another roller support will change the load experienced by the members under the same loading

No, the answer is incorrect.
Score: 0
Accepted Answers:
Δ BCF is an equilateral triangle
There are two redundant members in the structure
Forces experienced by members BC and CF have equal magnitude and are tensile in nature

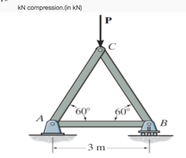
6) Find the magnitude of the force experienced by the member BG in N. (Take $\sqrt{2} = 1.41$, $\sqrt{3} = 1.73$, $\sqrt{5} = 2.23$ while calculating the final answer)



No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 880,900

2 points

7) Determine the greatest load *P* that can be applied to the given truss, so that none of the members are subjected to a force exceeding $3\sqrt{3}$ kN tension and $2\sqrt{3}$ kN compression.(in kN)



No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 5.5,6.5

1 point