

VIB : Finite Elements

Number of participants: 27



1. A finite element model with N degrees of freedom has

21 correct answers
out of 22 respondents

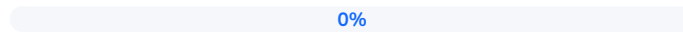


N eigenfrequencies and mode shapes



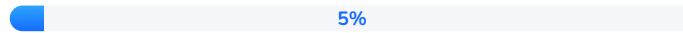
21 votes

$2N$ eigenfrequencies and mode shapes



0 votes

an infinity number of eigenfrequencies and mode shapes



1 vote

It depends on the frequency band and location of the excitation



0 votes



2. The damping matrix for Rayleigh damping is given by

23 correct answers
out of 23 respondents

$C = \text{constant}$



0 votes



$C = \alpha K + \beta M$



23 votes

$C = \alpha \omega K$



0 votes



3. For a global viscous damping model, the modal damping coefficient is

11 correct answers
out of 21 respondents



linearly proportional to the frequency



11 votes

inversely proportional to the frequency



6 votes

independent of the frequency



4 votes



4. The use of a constant material loss factor for damping leads to modal damping coefficients

12 correct answers
out of 14 respondents

which depend linearly on the frequency and the loss factor



0 votes



which are constant with the frequency equal to the loss factor divided by 2



12 votes

which evolve with the square of the frequency and proportionally to the loss factor



2 votes



5. If a structure is made of a single material with a loss factor $\eta=0.02$, the modal damping coefficient for all modes is equal to

18 correct answers
out of 21 respondents

0.02



3 votes



0.01



18 votes

0.05



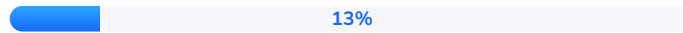
0 votes



6. When using local damping models

4 correct answers
out of 16 respondents

the damping matrix in the modal domain remains diagonal



2 votes



the damping matrix in the modal domain is not diagonal



12 votes



the damping matrix can be made diagonal if the damping is small



6 votes

damping can be neglected when solving the equations of motion



2 votes



7. For structures which undergo base excitation, the mode shapes are computed

18 correct answers
out of 23 respondents



With the DOFS fixed where the acceleration is imposed



18 votes

In free-free boundary conditions



5 votes