

Unit 7 - Week 5

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Assignment 5

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-10-02, 23:59 IST.

- 1) The generalized coordinates $\{\eta(t)\}$ obtained for free vibration analysis of an MDOF system are 1 point
- Sinusoidal
 - Impulse
 - Step-response
 - None of the above
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
a
- 2) The initial conditions on generalized coordinates, $\{\eta(0)\}$ can be obtained as, 1 point
- $[\mathcal{O}]^{-1}\{u(0)\}$
 - $[\mathcal{O}]^T\{u(0)\}$
 - $[\mathcal{O}]\{u(0)\}$
 - None of the above
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
a
- 3) In presence of rigid body mode, the mass matrix is 1 point
- symmetric
 - Un-symmetric
- a
 b
- No, the answer is incorrect.
Score: 0
Accepted Answers:
a
- 4) In presence of rigid body mode, the stiffness matrix is 1 point
- Positive definite
 - Positive semi-definite
 - symmetric
 - Un-symmetric
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
b
c
- 5) The mode shape corresponding to a rigid body mode is 1 point
- $\begin{bmatrix} 0 \\ 0 \end{bmatrix}$
 - $\begin{bmatrix} 1 \\ -1 \end{bmatrix}$
 - $\begin{bmatrix} 1 \\ 1 \end{bmatrix}$
 - $\begin{bmatrix} 0 \\ 1 \end{bmatrix}$
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
c
- 6) The mass and stiffness of the equivalent SDOF system with $[M] = \begin{bmatrix} m & 0 \\ 0 & 2m \end{bmatrix}$ and $[K] = \begin{bmatrix} k & -k \\ -k & k \end{bmatrix}$ 1 point
- m, 3k
 - 2m, 2k
 - 2m, 3k
 - m, 2k
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
c
- 7) In proportional damping, which of the parameters α and β has more effect on the equivalent damping ratio 1 point
- α
 - β
 - $(\alpha-\beta)$
 - $(\alpha+\beta)$
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
b
- 8) The second natural frequency of an MDOF system is 5 rad/s. the damping ratio of the second normal mode is 0.1. Considering $\alpha=0$, the value of β should be 1 point
- 0.04
 - 0.02
 - 0.01
 - 0.1
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
a
- 9) The proportional damping is one of the most common damping model, because it is 1 point
- Easy to implement
 - Allows modal analysis
 - Accurate
 - None of the above
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
a
b
- 10) Which of the following is an indirect time integration scheme 1 point
- Central difference
 - Newmark's method
 - Modal analysis
 - None of the above
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
c
- 11) Which of the following time integration schemes is an implicit scheme 0 points
- Central difference
 - Modal analysis
 - Newmark's method
 - Wilson – Θ method
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
c
- 12) For a conditionally stable scheme, the time step should be _____ than a critical value, 1 point
- Less
 - Greater
 - Equal
 - Not equal
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
a
- 13) The equation of motion of a continuous system is a _____ differential equation 1 point
- Ordinary
 - Partial
 - Second order
 - Homogeneous
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
b
- 14) The equation of motion of continuous system can be obtained using 1 point
- Dynamic force equilibrium
 - Principle of virtual work
 - D' Alembert's principle
 - Hamilton's principle
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
a
b
c
d
- 15) The number of normal modes for a bar under axial vibration is 1 point
- One
 - Zero
 - Infinite
 - Two
- a
 b
 c
 d
- No, the answer is incorrect.
Score: 0
Accepted Answers:
c