Assignment 03

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

Due on 2019-03-20, 23:59 IST.

1) __________ cannot be the weight function in weak form of the differential equation if the primary variable is known at x=0 & x=1.
   - $x^2$
   - $x^2(x-1)$
   - $\sin(\pi x)$
   - $x(x-1)$
   - No, the answer is incorrect.
   - Score: 0
   - Accepted Answers: $x^2$

2) $\delta(F_1 F_2) = __________$
   - $F_1 F_2$
   - $F_1 \delta F_2 + F_2 \delta F_1$
   - $\delta F_1 F_2$
   - $\delta F_1 \cdot \delta F_2$
   - No, the answer is incorrect.
   - Score: 0
   - Accepted Answers: $F_1 F_2$

3) If bending moments at both ends are known in a beam problem, then:
   - they must be homogeneous to solve the problem.
   - they will be referred as essential boundary conditions.
   - they will be referred as natural boundary conditions.
   - No, the answer is incorrect.
   - Score: 0
   - Accepted Answers: they will be referred as natural boundary conditions.
4) Always the variation of primary variable will be zero at ______.
   - end points.
   - whole domain.
   - mid point
   - boundary locations where primary variable is specified.

No, the answer is incorrect.
Score: 0
Accepted Answers:
boundary locations where primary variable is specified.

5) If displacements at both ends are known in a beam problem, then:
   - they must be homogeneous to solve the problem.
   - they will be referred as essential boundary conditions.
   - they will be referred as natural boundary conditions.
   - none of the options are correct.

No, the answer is incorrect.
Score: 0
Accepted Answers:
they will be referred as essential boundary conditions.

6) Which of the following is not correct?
   - Essential boundary condition has to be satisfied, no matter what form of differential equation
   - Natural boundary condition is imposed on a derivative of primary variable.
   - Essential boundary condition is always homogeneous.
   - Essential boundary condition is imposed on the primary variable.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Essential boundary condition is always homogeneous.

7) Which of the following is not true?
   - Natural boundary condition need not be satisfied in weak form.
   - Φ's (approximate functions) can be chosen more flexibly in weak form.
   - Weak form weakens the differentiability requirement on weight functions.
   - Weak form weakens the differentiability requirement on primary variable.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Weak form weakens the differentiability requirement on weight functions.

8) Which of the following boundary condition need not be satisfied by the approximation function?
(Consider 'u' as primary variable)
   - \( \frac{du}{dx} = 0 \) at \( x=L \)
   - \( u = 0 \) at \( x = L \)
   - \( u = 1 \) at \( x = 0 \)
   - \( u = 0 \) at \( x = 0 \)
No, the answer is incorrect.
Score: 0
Accepted Answers:
\[ \frac{dy}{dx} = 0 \text{ at } x=L \]