Assignment 7

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

Due on 2020.11.04, 23:59 IST.

1) Choose True/False for the following assertion: "Kirchhoff stress tensor is work conjugate with the rate of deformation tensor with respect to the current volume."
- (a) True
- (b) False
No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) True
(b) False

2) Choose True/False for the following assertion: "The push-forward of the second Piola-Kirchhoff stress tensor to the current configuration gives the Kirchhoff first stress tensor."
- (a) True
- (b) False
No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) True
(b) False

3) Choose True/False for the following assertion: "Work per unit current volume is equal to the work per unit initial volume."
- (a) True
- (b) False
No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) True
(b) False

4) Choose True/False for the following assertion: "Work per unit mass is invariant."
- (a) True
- (b) False
No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) True
(b) False

5) Choose True/False for the following assertion: "The stress tensor work conjugate with the material rate of the stretch tensor $U$ is the symmetric part of the $\mathbf{F}$ tensor."
Start with the fact that the second Piola-Kirchhoff stress tensor $\mathbf{S}$ is work conjugate with the material rate of Green-Lagrange strain tensor $\mathbf{E}$, and then substitute for $\mathbf{E}$ in terms of $U$ to check.
- (a) True
- (b) False
No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) True
(b) False

6) Choose True/False for the following assertion: "Expression for the hydrostatic pressure $p$ is given as $p = J^{-1} F : F \text{'(Hint: Decompose $F$ into deviatoric and hydrostatic part and then proceed)}
- (a) True
- (b) False
No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) True
(b) False

7) The deviatoric part of the second Piola-Kirchhoff stress tensor is orthogonal to the ______ tensor.

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

8) The deviatoric part of the first Piola-Kirchhoff stress tensor is orthogonal to the ______ tensor.

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