

Unit 13 - Week 11

Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Cartesian Tensors

Hamiltonian Mechanics: Hamilton's equations of motion

Hamiltonian Mechanics: Liouville's theorem

Quiz : Assignment 11

Week 11 Feedback Form : Introduction to Classical Mechanics

Week 12

Live session

Video Download

Assignment 11

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

Due on 2020-12-02, 23:59 IST.

1) Suppose A and B are vectors and M is a second rank tensor, then, which of the following are incorrect equations. (In all the equations below summation convention over repeated indices is implied.) 4 points

$$A_i = M_{ij}B_i$$

$$A_i = M_{ii}B_i$$

$$A_i = \epsilon_{ijk}B_i$$

No, the answer is incorrect.
Score: 0

Accepted Answers:

$$A_i = M_{ij}B_i$$

$$A_i = M_{ii}B_i$$

$$A_i = \epsilon_{ijk}B_i$$

2) Two tensors Γ_{ijkl} and Ω_{ijkl} are combined in the following manner to form a new tensor: 3 points

$$\Gamma_{ijkl} \delta_{lq} \Omega_{qmp}.$$

The rank of the above tensor is

10

8

7

6

No, the answer is incorrect.
Score: 0

Accepted Answers:

6

3) Consider rotations in an N -dimensional space. If A_i and B_i are N dimensional vectors and $\epsilon_{i_1 i_2 \dots i_N}$ is the Levi-Civita tensor, can you define a vector that would be a cross-product of vectors A and B , as we could in case of 3-dimensional space ? 3 points

Yes

No

No, the answer is incorrect.
Score: 0

Accepted Answers:

No