

PhysicsByAaryan

CSIR NET . GATE . JEST . BARC - Physics

Tensors - CSIR NET Physics PYQs

Mathematical Physics . All PYQs (2015-2025) with answer key

2 questions . Answer key included

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Q1. [June 2015] . 5.0 marks

Mathematical Physics > Tensors

CSIR NET	2015 June	5 M
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The rank-2 tensor $x_i x_j$, where x_i are the Cartesian coordinates of the position vector in three dimensions, has 6 independent elements. Under rotation, these 6 elements decompose into irreducible sets (that is, the elements of each set transform only into linear combinations of elements in that set) containing

1. 4 and 2 elements
2. 5 and 1 elements
3. 3, 2 and 1 elements
4. 4, 1 and 1 elements

Q2. [June 2021] . 3.5 marks

Mathematical Physics > Tensors

CSIR NET	2021 June	3.5M
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The components of the electric field, in a region of space devoid of any charge or current sources, are given to be $E_i = a_i + \sum_{j=1,2,3} b_{ij}x_j$, where a_i and b_{ij} are constants independent of the coordinates. The number of independent components of the matrix b_{ij} is

1. 5
2. 6
3. 3
4. 4

Answer Key

2 questions . Subject and topic for quick revision

Q. No	Subject	Topic	Answer
Q1	Mathematical Physics	Tensors	2
Q2	Mathematical Physics	Tensors	1

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