

**LIST OF TOPICS  
2024 ACADEMIC CHALLENGE STATE EXAM**

<b>Mechanics</b>	<b>Total count of questions</b>	<b>Question number</b>
Units	1	1
Kinematics	2	28, 29
Vectors	2	2, 35
Newton's Laws	4	3, 26, 27, 34
Dimensional Analysis	1	10
Work-Energy	2	4, 5
Conservation of Energy	1	6
Potential Energy	1	30
Angular Momentum	1	32
Conservation of momentum	1	7
Gravitation	1	21
Density	0	
Rotational Dynamics	3	8, 9, 31
Simple Harmonic Motion	1	11
Center of mass	1	24
Static equilibrium	1	19
Power	1	20
Fluid Dynamics	0	
Electricity & Magnetism	2	13, 14
Thermodynamics	2	22, 25
Optics	2	15, 16
Sound	1	12
Modern Physics	2	17, 18
Nuclear Physics	1	33
Special Relativity	1	23

**Factual Recall Problems 11, 18**

**Multiple Problems (4, 5) (28, 29) (31, 32)**

**Previous Exams 10, 17, 18, 19, 20**