

RAMASHRAY BALESHWAR COLLEGE, DALSINGSARAI, SAMASTIPUR

PHYSICS DEPARTMENT

B. Sc. IIIrd SEMESTER (2024-28)

[MJC/MIC PHYSICS (Theory) – III] : Thermal Physics & Thermodynamics

Date: 21 December 2025

Submission Duration: 5-8 January 2026

Assignment

Note: Attempt any four questions.

Marks : 10 Marks

Question 1: Describe the First Law of Thermodynamics. What are the physical significance and limitations of First Law of Thermodynamics.

Question 2: Explain the Internal Energy of a Thermodynamical System.

Question 3: What do you mean by Heat Engine? Describe its working and efficiency.

Question 4: Define Entropy. What is its physical significance? Show that the Entropy of a perfect gas remains constant in reversible process.

Question 5: Establish Maxwell's four Thermodynamical Relation.

Dr. Dheeraj Kumar Pandey
Head, Department of Physics

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B. Sc. IIIrd SEMESTER (2024-28)

[MJC PHYSICS (Theory) – IV] : Electricity & Magnetism

Date: 21 December 2025

Submission Duration: 5-6 January 2026

Assignment

Note: Attempt any two questions.

Marks : 10 Marks

Question 1: What do you mean by Electric Dipole? Obtain an expression for Electric Field and Potential at a point due to Electric Dipole.

Question 2: What do you mean by Gauss's Law of Electrostatics? Obtain the expression for Electric Field at a point due to Spherical Charged Conductor.

Question 3: What are Poission's and Laplace's equation? Obtain expression for capacity of Parallel Plate Capacitor by using Laplace's equation.

Question 4: What do you mean by Dielectric Constant. Establish the relation among \vec{P} , \vec{D} and \vec{E} .

Question 5: What do you mean by Polarization. Describe the types of Polarization.

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DEPARTMENT OF PHYSICS

B. Sc. IIIrd SEMESTER (2024-28)

[MJC/MIC PHYSICS (Practical) – III] : Thermal Physics & Thermodynamics

Date: 21 December 2025

Submission Duration: 5-8 January 2026

Assignment

Note: Attempt any two questions.

Marks: 10 Marks

Question 1: Describe the theory of determination of Mechanical Equivalent of Heat (J) with the help of Joule's Calorimeter.

Question 2: Describe the theory of determination of the Coefficient of Thermal Conductivity of a good conductor by Searle's Method.

Question 3: Describe the theory of determination of the Coefficient of Thermal Conductivity of a bad conductor by Lee's Disc Method.

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B. Sc. IIIrd SEMESTER (2024-28)

[MJC PHYSICS (Practical) – IV] : Electricity & Magnetism

Date: 21 December 2025

Submission Duration: 5-6 January 2026

Assignment

Note: Attempt any two questions.

Marks: 10 Marks

Question 1: Describe the merit of Moving Coil Galvanometer.

Question 2: Describe the theory of determination of Self Inductance of a coil by Anderson Bridge.

Question 3: Explain (a) Resistance (b) AC and DC Voltages (c) DC Current and (d) Capacitances.

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PHYSICS DEPARTMENT

B. Sc. IIIrd SEMESTER (2024-28)

[MDC/IDC PHYSICS (Theory) – III] : Atmospheric and Space Science

Date: 21 December 2025

Submission Duration: 7-8 January 2026

Assignment -1

Note: Attempt any four questions.

Marks : 10 Marks

Question 1: Describe the origin and internal structure of Earth as a planet.

Question 2: Describe the structure and composition of atmosphere.

Question 3: Discuss the perception of space from early civilization to pre-telescopic era and post-telescopic era.

Question 4: Describe about the important international organizations involved in space exploration.

Question 5: Describe about the formation of our Solar System.

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