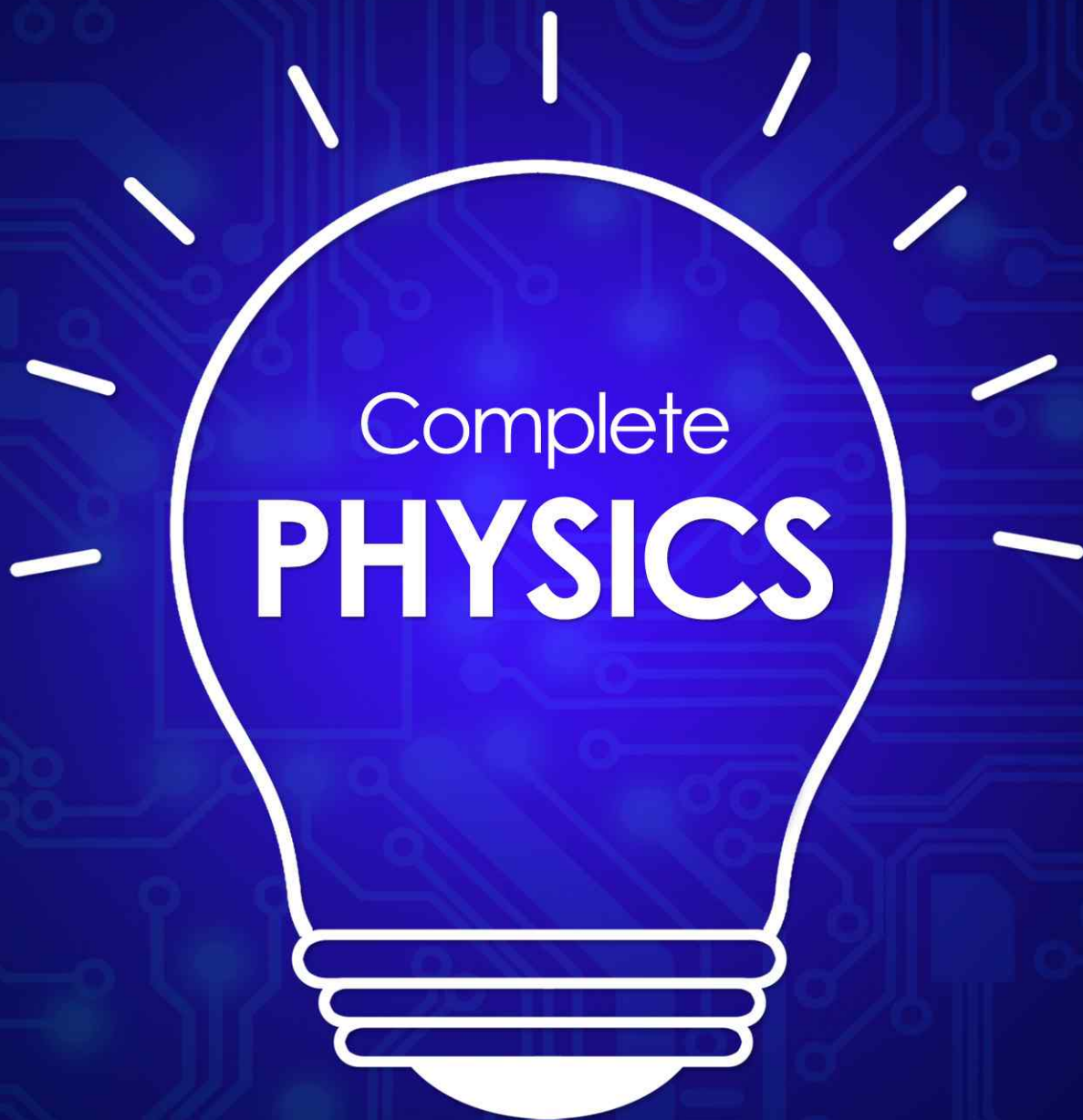




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CLASS 11 & 12th



Learning Inquiry
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CLASS 12th

Magnetism and Matter

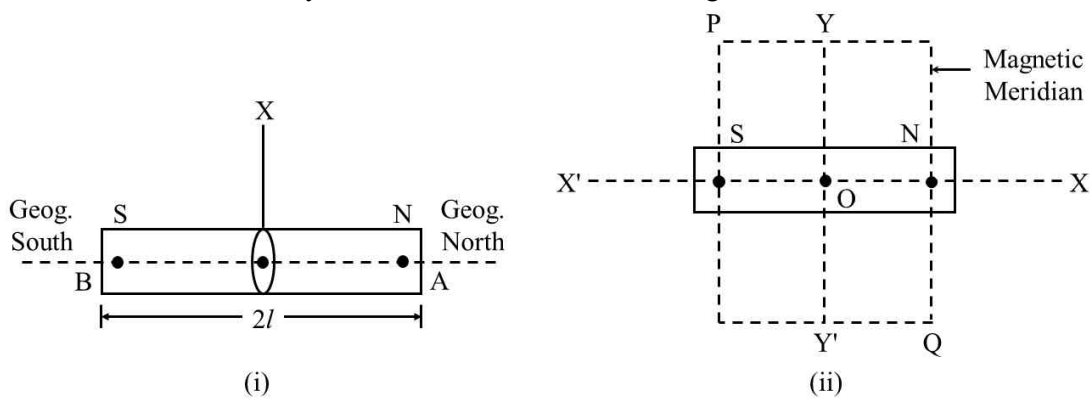
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01. The Bar Magnet

(i) The Bar Magnet

It is the most commonly used form of an artificial magnet.



$$F = \frac{\mu_0}{4\pi} \frac{m_1 m_2}{r^2}$$

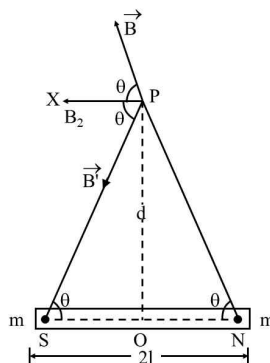
02. The Magnetic Field Lines

Magnetic field line is an imaginary curve, the tangent to which at any point gives us the direction of magnetic field $\vec{B}$ at that point.

The path along which the compass needles are aligned is known as magnetic field line.

03. Magnetic Field Strength At a Point Due to Bar Magnet

The strength of magnetic field at any point is defined as the force experienced by a hypothetical unit north pole placed at that point. It is a vector quantity. The direction of magnetic field ($\vec{B}$) is the direction along which hypothetical unit north pole would tend to move if free to do so.



$$B_1 = \frac{\mu_0}{4\pi} \frac{2Md}{d^4} = \frac{\mu_0}{4\pi} \frac{2M}{d^3}$$