

PYQs on Magnetic Effects of Current (2014-2024)

The phenomenon of electromagnetic induction implies a production of induced

- (a) resistance in a coil when the magnetic field changes with time
- (b) current in a coil when an electric field changes with time
- (c) current in a coil when a magnetic field changes with time
- (d) voltage in a coil when an electric field changes with time



**ABHIGYAN
ACADEMY**





Which one of the following is the correct relation between frequency f and angular frequency ω ?

(a) $f = \pi\omega$

(b) $\omega = 2\pi f$

(c) $f = 2\omega/\pi$

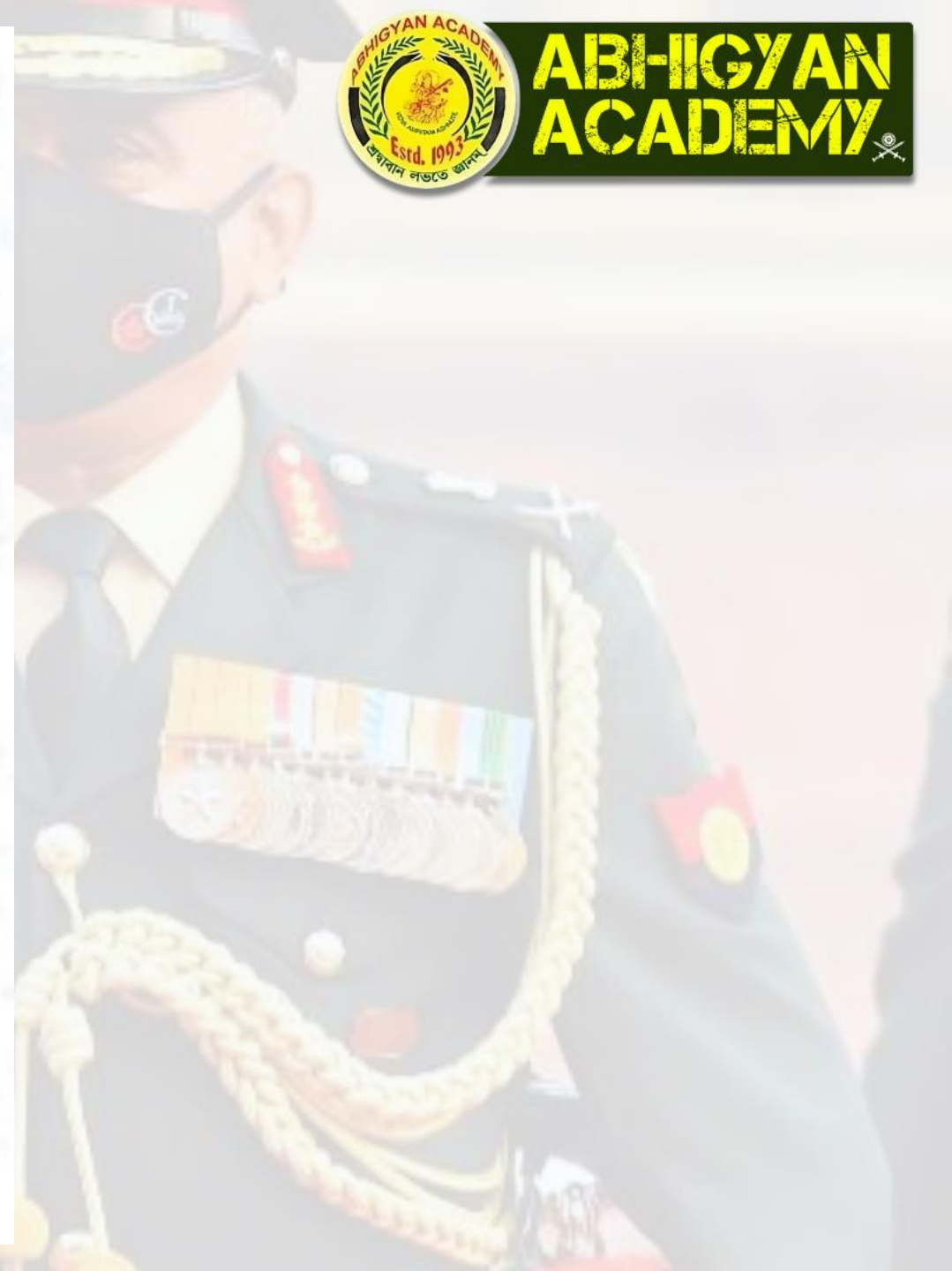
(d) $f = 2\pi\omega$



**ABHIGYAN
ACADEMY**

In a solenoid, the current flowing through the wire is I and number of turns per unit length is n . This gives a magnetic field B inside the solenoid. If number of turn per unit length is increased to $2n$, what will be the value of magnetic field in the solenoid ?

- (a) B
- (b) $2B$
- (c) $B/2$
- (d) $B/4$





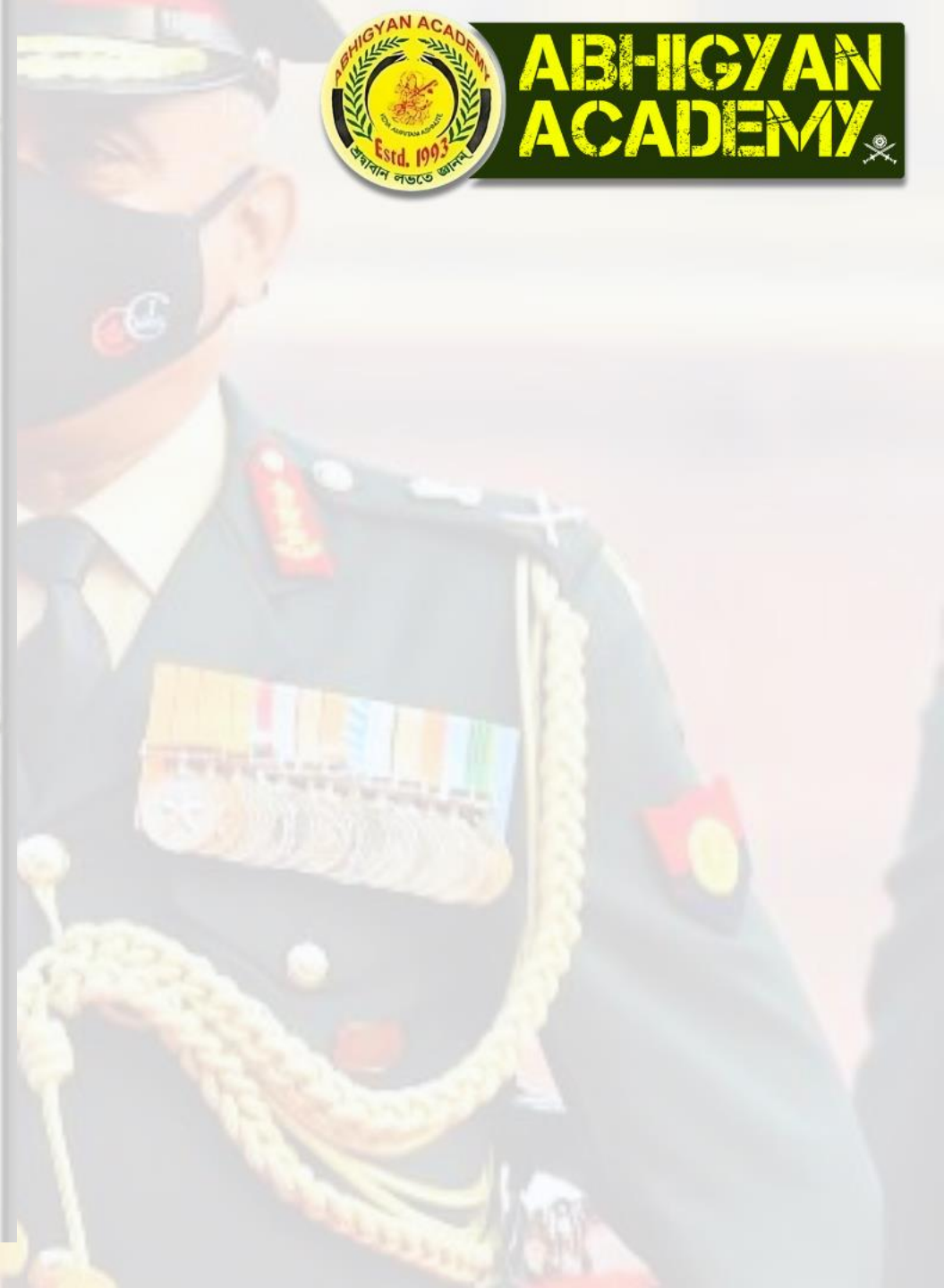
- . Which one of the following statements about magnetic field lines is NOT correct ?
- (a) They can emanate from a point
 - (b) They do not cross each other
 - (c) Field lines between two poles cannot be precisely straight lines at the ends
 - (d) There are no field lines within a bar magnet

What is the net force experienced by a bar magnet placed in a uniform magnetic field ?

- (a) Zero
- (b) Depends upon length of the magnet
- (c) Never zero
- (d) Depends upon temperature



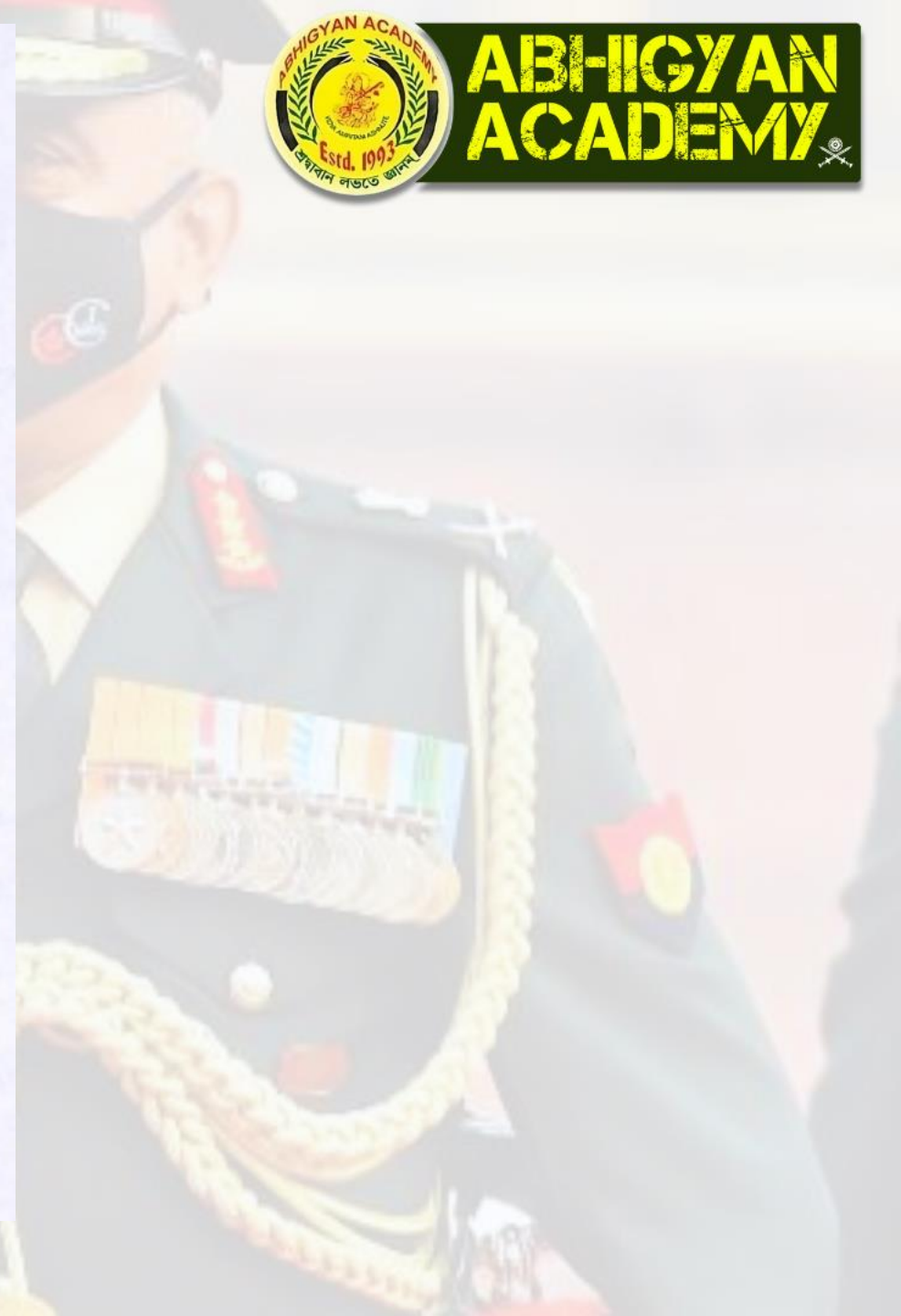
**ABHIGYAN
ACADEMY**





A positive charge is moving towards south in a space where magnetic field is pointing in the north direction. The moving charge will experience :

- (a) a deflecting force towards north direction.
- (b) a deflecting force towards east direction.
- (c) a deflecting force towards west direction.
- (d) no deflecting force.



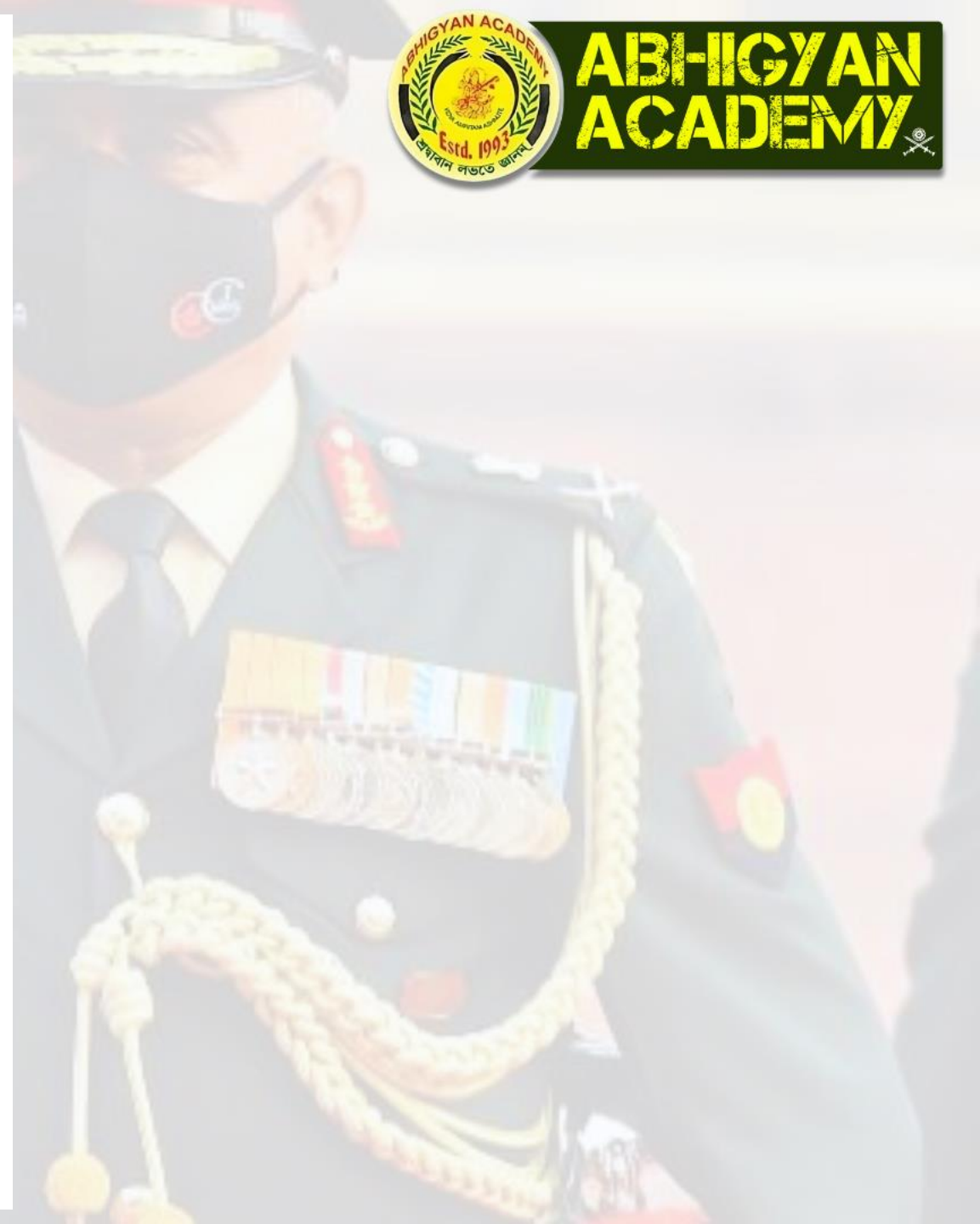
68. A force \vec{F} , acting on an electric charge q , in presence of an electromagnetic field, moves the charge parallel to the magnetic field with velocity \vec{v} . Then \vec{F} is equal to (where \vec{E} and \vec{B} are electric field and magnetic field respectively)

(a) $q\vec{E}$

(b) $q(\vec{v} \times \vec{B})$

(c) $q(\vec{v} \times \vec{E})$

(d) $q\vec{B}$





Statement I :

It is not necessary that every bar magnet has one North Pole and one South Pole.

Statement II :

Magnetic poles occur in pair.

Code :

- (a) Both the statements are individually true and Statement II is the correct explanation of Statement I
- (b) Both the statements are individually true but Statement II is **not** the correct explanation of Statement I
- (c) Statement I is true but Statement II is false
- (d) Statement I is false but Statement II is true



**ABHIGYAN
ACADEMY**

. X-rays are electromagnetic radiation whose wavelengths are of the order of:

- (a) 1 metre
- (b) 10^{-1} metre
- (c) 10^{-5} metre
- (d) 10^{-10} metre



4. A circular coil of radius R having N number of turns carries a steady current I . The magnetic induction at the centre of the coil is 0.1 tesla. If the number of turns is doubled and the radius is halved, which one of the following will be the correct value for the magnetic induction at the centre of the coil?

- (a) 0.05 tesla
- (b) 0.2 tesla
- (c) 0.4 tesla
- (d) 0.8 tesla



The magnetic field strength of a current-carrying wire at a particular distance from the axis of the wire

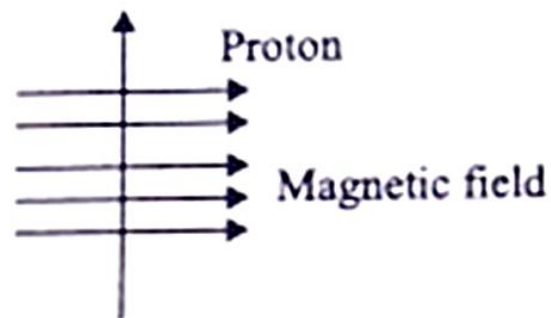
- (a) depends upon the current in the wire
- (b) depends upon the radius of the wire
- (c) depends upon the temperature of the surroundings
- (d) None of the above



The symbol of SI unit of inductance is H. It stands for

- (a) Holm
- (b) Halogen
- (c) Henry
- (d) Hertz

132. Consider the following image :



A proton enters a magnetic field at right angles to it, as shown above. The direction of force acting on the proton will be

- (a) to the right
- (b) to the left
- (c) out of the page
- ✓(d) into the page



. Which one of the following statements regarding magnetic field is NOT correct ?

- (a) Magnetic field is a quantity that has direction and magnitude
- (b) Magnetic field lines are closed curves
- ☒ (c) Magnetic field lines are open curves
- (d) No two magnetic field lines are found to cross each other



Imagine a current-carrying straight conductor with magnetic field of lines in anti-clockwise direction. Then the direction of current is determined by

- (a) the Right-Hand Thumb rule and it would be in the downward direction.
- (b) the Left-Hand Thumb rule and it would be in the downward direction.
- ✓ (c) the Right-Hand Thumb rule and it would be in the upward direction.
- (d) the Left-Hand Thumb rule and it would be in the upward direction.



**ABHIGYAN
ACADEMY**

