

SUCCESS KEY TEST SERIES

Work Sheet

Std: 11th Science

Subject: Physics

Time: 1Hrs

Date :

12. Magnetism

Max Marks: 35

Q.1 Select and write the most appropriate answers from given alternatives:

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- 1) Which of the following is not correct for the magnetic equator?
 - (a) The magnetic equator passes through the ends of a magnet.
 - (b) The magnetic equator is parallel to the magnetic axis.
 - (c) A bar magnet has three magnetic equators.
 - (d) All the above.
- 2) Which of the following determines the strength of magnetic field?
 - (a) Density of magnetic field lines
 - (b) Area of the magnet
 - (c) Mass of the magnet
 - (d) Strength of the magnet
- 3) Which of the following is correct for magnetic lines of force?
 - (a) The magnetic lines of force originate at the North Pole and terminate at the South Pole.
 - (b) The magnetic lines of force of a solenoid form closed loops.
 - (c) The tangent drawn to the magnetic line of force gives the direction of magnetic field at that point.
 - (d) All the above
- 4) SI unit of magnetic flux is
 - (a) Weber
 - (b) Newton
 - (c) Joule
 - (d) Tesla
- 5) Which of the following is the correct relationship between the magnetic length and the geometric length?
 - (a) Magnetic length = $\frac{5}{6}$ × Geometric length
 - (b) Magnetic length = $\frac{2}{6}$ × Geometric length
 - (c) Magnetic length = $\frac{6}{5}$ × Geometric length
 - (d) Magnetic length = Geometric length

Q.2 Answer the following very short questions:

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- 1) At which two places the magnetic needle shows the true north in India?
- 2) Define angle of dip.
- 3) Where are the fictitious magnetic north pole and the south pole of the Earth located?
- 4) What is terrestrial magnetism?
- 5) Define magnetic equatorial circle?

Q.3 Answer the following:

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- 1) Draw a neat labelled diagram of Earth's magnetism.
- 2) Two bar magnets are placed on a horizontal surface. Draw magnetic lines around them. Mark the position of any neutral points (points where there is no resultant magnetic field) on your diagram.
- 3) Draw a neat labelled diagram of a bar magnet.
- 4) What happens if a bar magnet is cut into two pieces transverse to its length/ along its length?
- 5) Write a short note on Earth's magnetic field.

Q.4 Answer the following:

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- 1) What is a geographic meridian. How does the declination vary with latitude? Where is it minimum?
- 2) Write the properties of magnetic lines of force?
- 3) A short magnetic dipole has magnetic moment 0.5 A m^2 . Calculate its magnetic field at a distance of 20 cm from the centre of magnetic dipole on (i) the axis (ii) the equatorial line (Given $\mu_0 = 4\pi \times 10^{-7}$ SI units)
- 4) Explain the pole strength and magnetic dipole moment of a bar magnet. Write the SI units of both.
- 5) A magnetic pole of bar magnet with pole strength of 100 Am is 20 cm away from the centre of a bar magnet. Bar magnet has pole strength of 200 Am and has a length 5 cm. If the magnetic pole is on the axis of the bar magnet, find the force on the magnetic pole.

----- All the Best -----