Maharashtra HSC Physics Answer Key 2025

Section A Question Number 1 Solutions

Question	Answer Key
i) "If two systems are each in thermal equilibrium with a third system, they are also in thermal equilibrium with each other." The statement refers to	(a) Zeroth Law of Thermodynamics
ii) In Bernoulli's theorem, which of the following is constant?	(d) Energy
iii) Which of the following materials belongs to a diathermanous substance?	(c) Glass
iv) Electric potential 'V' at a distance 'r' from a point charge is directly proportional to	(c) 1/r
v) Which of the following equations gives a correct expression for the internal resistance of a cell by using a potentiometer?	(d) r = R[(E/V)-1]
vi) An electron, a proton, an α particle and a hydrogen atom are moving with the same kinetic energy. The associated De Broglie wavelength will be the longest for	(b) Electron
vii) The gate which produces high output, when both inputs are high is -	(b) AND gate
viii) The power rating of a ceiling fan rotating with a constant torque of 2 Nm with an angular speed of 2π rad/s will be	(d) 4π W
ix) A string of length 2 m is vibrating with 2 loops. The distance between its node and adjacent antinode is	(a) 0.5 m

x) A transformer increases an alternating e.m.f from 220 V to 880 V. If the primary coil has 1000 turns, the number of turns in the secondary coil are (d) 4000

Section A Question Number 2 Solutions

Question	Answer Key
i) At what temperature the surface tension of a liquid becomes zero?	0 (zero) Kelvin
ii) Define self-inductance.	e = Ldi/dt
iii) What is the work done by an external uniform magnetic field perpendicular to the velocity of a moving charge?	Zero
iv) What do you mean by a Thermodynamic system?	A thermodynamic system is a collection or a group of objects that has the ability to exchange matter and energy with the surroundings.
v) What is the value of B called when H = 0 in the hysteresis loop?	Retentivity
vi) State the formula for the angle of banking.	$\Theta = \tan^{-1}(V^2/rg)$
vii) Calculate the electric field intensity at a point just near the surface of a charged plane sheet, measured from its midpoint.	0.5×10^6 N/C
viii) Find the kinetic energy of 1 litre of an ideal gas at S.T.P	3/2 KT