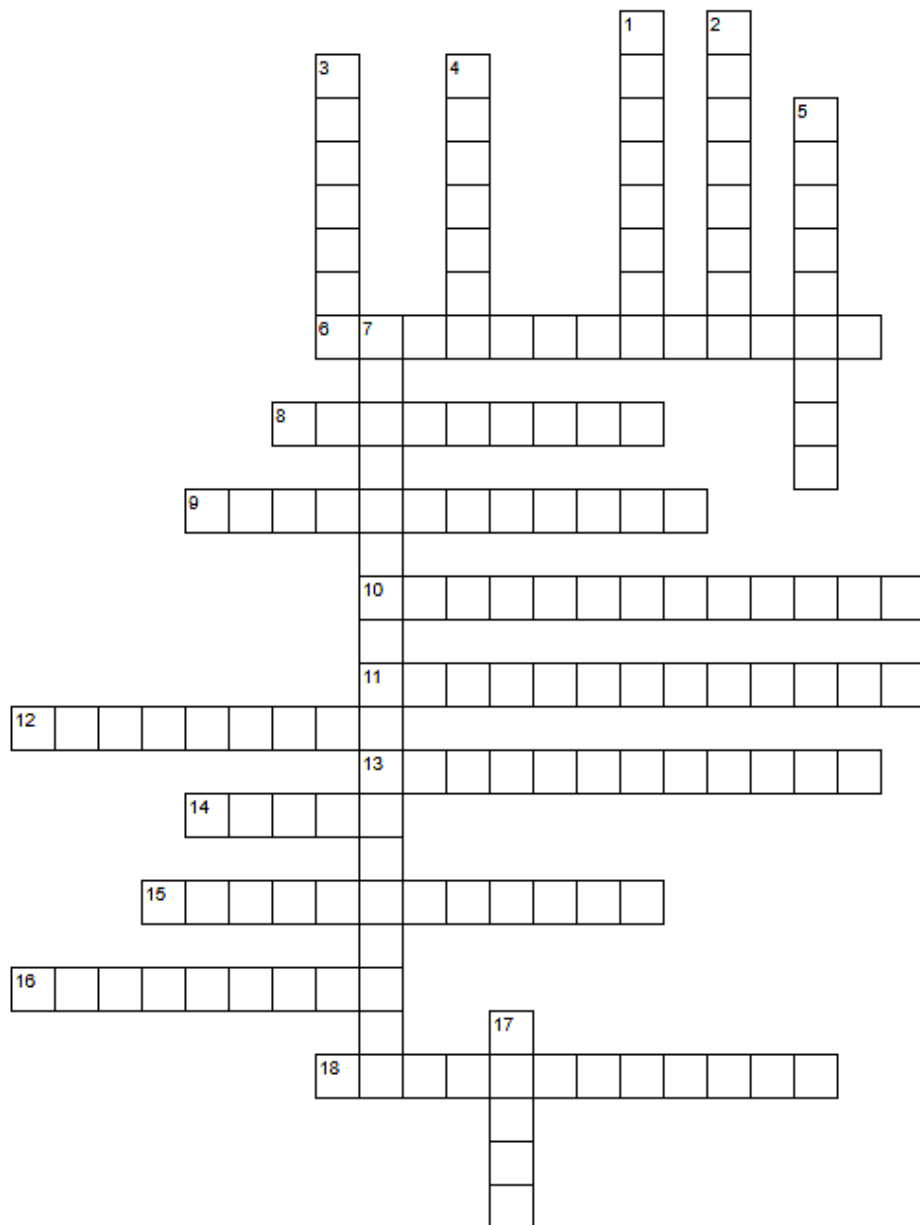


AH Physics - Electromagnetism



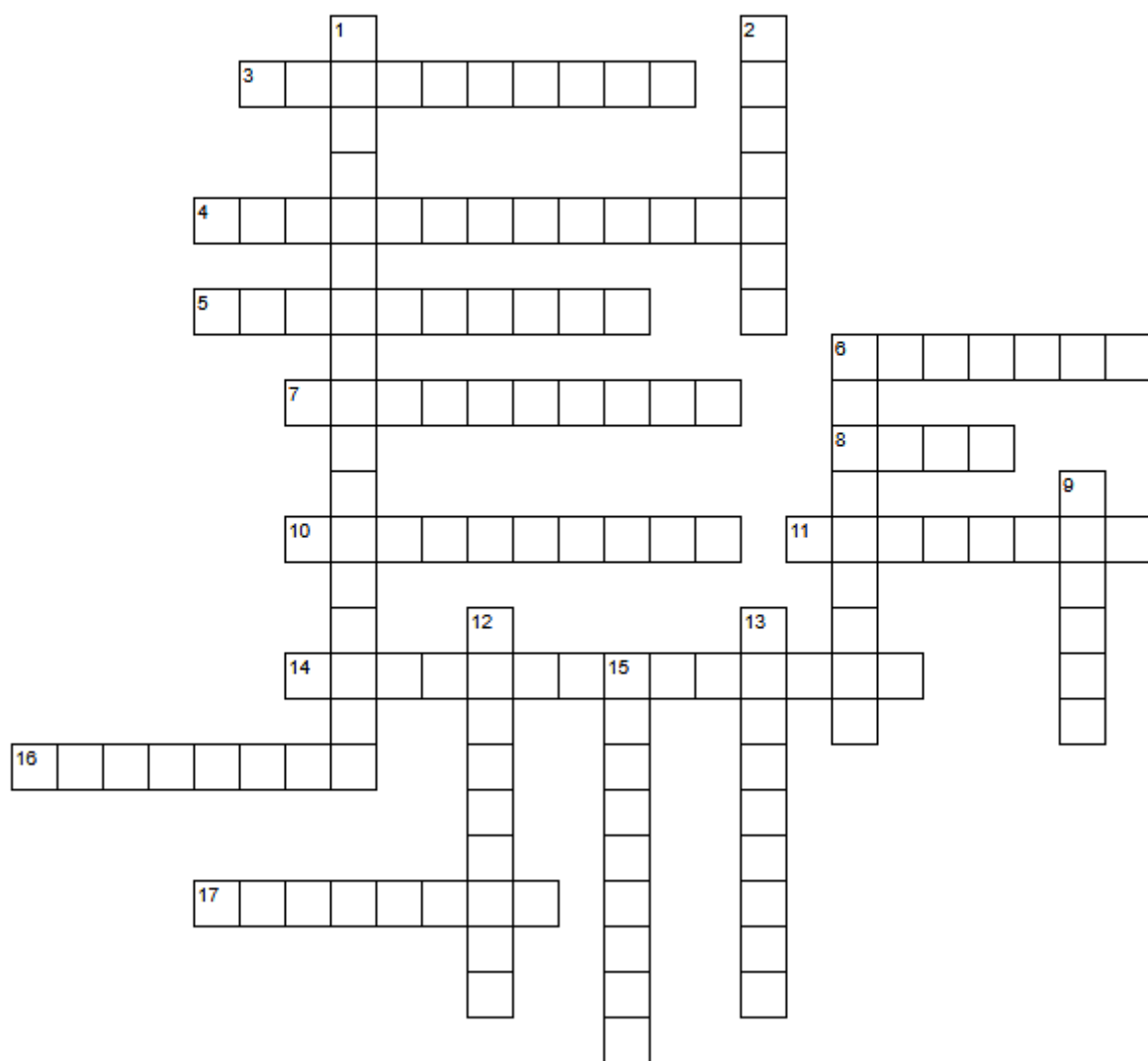
Across

- 6 The force experienced per unit positive charge is the electric... (5,8)
- 8 Strength of a magnetic field, denoted by letter B (9)
- 9 This equals RC in a resistor/capacitor circuit (4,8)
- 10 Coulomb's equation for the force between two charges is an example of what type of law? (7,6)
- 11 Surface on which the potential is the same at all points (13)
- 12 The reactance of this component decreases as AC frequency increases (9)
- 13 Energy acquired when an electron accelerates through a potential difference of 1 V (12)
- 14 Unit of magnetic induction (5)
- 15 The constant ϵ_0 is the what of free space? (12)
- 16 A device for accelerating charged particles (9)
- 18 The constant μ_0 is the what of free space? (12)

Down

- 1 A coil of wire wound around a soft iron core (8)
- 2 Scientist whose famous oil-drop experiment showed that charge is quantised (8)
- 3 This opposes the build-up of current in an inductor (4,1,1,1)
- 4 A charge moving at an angle to a magnetic field may follow this shape of path (7)
- 5 The work done in bringing a unit positive test charge from infinity to a point is the electrostatic... (9)
- 7 This equals $2\pi f L$ (9,9)
- 17 Unit of inductance of an inductor (5)

AH Physics - Quanta & Waves



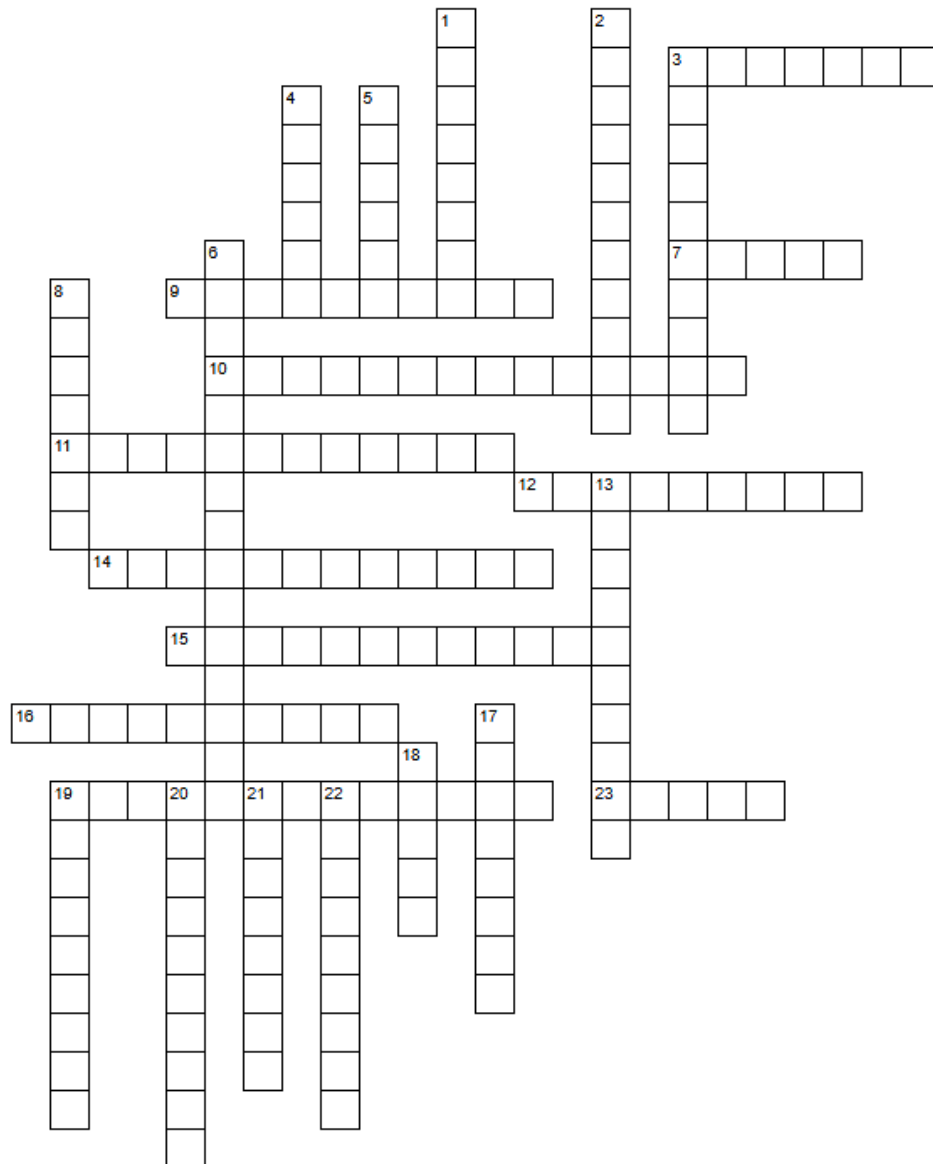
Across

- 3 Famous experiment demonstrating the wave properties of electrons (6,4)
- 4 Effect that first showed that light exists in small packets called photons (13)
- 5 High energy particles originating outside the Earth (6,4)
- 6 Most oscillations will eventually come to rest because of... (7)
- 7 Scientist Ernest ... proposed the first 'solar system' model of the atom (10)
- 8 Scientist Niels ... proposed that electrons exist in certain permitted energy levels (4)
- 10 Scientist who discovered the uncertainty principle (10)
- 11 The units of Planck's constant are equivalent to those of angular ... (8)
- 14 Oscillating type of motion produced by a linear restoring force (6,8)
- 16 The type of wave produced in a guitar string or the air column in a flute (8)
- 17 If you measure the exact momentum of a particle you have no idea about its ... (8)

Down

- 1 When a particle passes an energy barrier that classical physics would not allow (7,10)
- 2 The ... path difference takes into account the refractive index of the medium light is travelling in (7)
- 6 A particle with momentum p has a ... wavelength equal to h/p (2,7)
- 9 Light display caused by solar wind particles hitting atoms in the atmosphere (6)
- 12 An idealised surface that absorbs all wavelengths of electromagnetic radiation (5,4)
- 13 When the electric field of a wave is in only one plane, the wave is linearly ... (9)
- 15 The energy carried by a wave is proportional to the square of its... (9)

AH Physics - Rotational Motion & Astrophysics



Across

- 3 Gravitational ... is when light curves around a massive object on the way to Earth (7)
- 7 Greek letter used for angular velocity (5)
- 9 In 1510, he proposed that the Sun, not Earth, was centre of the solar system (10)
- 10 Property of a planet equal to the square root of $2GM/r$ (6,8)
- 11 The radius around a black hole within which light cannot escape (5,7)
- 12 Work done in moving a unit mass from infinity to a point in a gravitational field (9)
- 14 Scottish mountain that was used to 'weigh' the Earth and estimate G (12)
- 15 This always acts in towards the centre of the circle (7,5)
- 16 Apparent ... is the energy per unit area received on Earth from a celestial body (10)
- 19 Radius you'd have to squash a mass into so that light cannot escape (13)
- 23 Greek letter used for angular acceleration (5)

Down

- 1 The shortest possible line that an object can travel between points in curved space (8)
- 2 This principle says an accelerating frame is indistinguishable from a gravitational field (11)
- 3 The total rate (in Watts) at which energy is radiated by a celestial body (10)
- 4 Equal to tangential force times radius (6)
- 5 There are 2 pi of these in a full circle (6)
- 6 The resistance to change in angular motion (6,2,7)
- 8 Hertzsprung- ... diagrams show the luminosity and temperature of different types of stars (7)
- 13 You need to know the difference between central and ... acceleration (10)
- 17 The rate of change of displacement (8)
- 18 Greek letter used for angular displacement (5)
- 19 The 4-dimensional structure of the Universe (9)
- 20 The likely final stage of our Sun's life (5,5)
- 21 Our Sun will expand into one of these later in its life (3,5)
- 22 When a particularly big star collapses and releases a huge burst of energy (9)