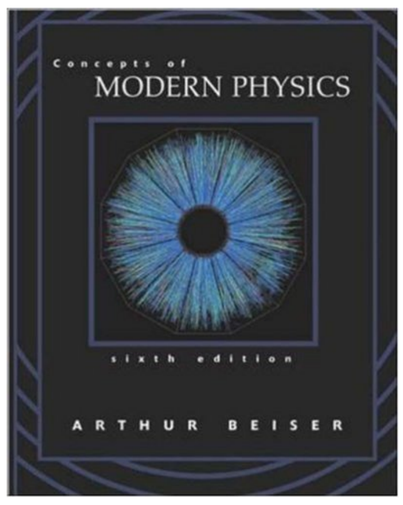
Modern Physics Kenneth Krane Pdf Free Download



An example is considered in Exercise.5. Home work : 14 of 30 14 How can a scientist be sure that the instruments on which he bases his measurements are functioning properly? 6 Because those measurements are the only thing he can observe directly. Home work : 15 of 30 15 How can the measurement of distance on a global scale be done? 7 The meter is defined as the length of the path traversed by light in 1/299,792,458 of a second. The meter is defined by the speed of light in a vacuum. However, this definition has no direct connection with space because the speed of light does not vary in space. The meter is based on a fixed length of 1/299,792,458 of a second, Home work : 16 of 30 16 How does the microwave or the laser work? 8 The wavelength of a particular electromagnetic wave depends on its frequency. Any small change in frequency will change the wavelength. A microwave oscillator is based on the properties of an electric circuit. When an alternating voltage is applied to a circuit that is able to oscillate, the frequency of the alternating current depends on the Home work : 17 of 30 17 How is the greatest distance in a vacuum measured? 7 The distance between two charges of the same sign is the product of the charges and is proportional to the charge on each side of the charges. The distance is always less than the sum of the charges because it is impossible to have a charge that is both positive and negative at the same time. This is known as the Gauss law Home work : 18 of 30 18 How can scientists use the electric and magnetic field measurements to detect electromagnetic waves? 7 A changing electric field creates a changing magnetic field, but the field of a static electric charge is not a changing magnetic field. There must be a changing magnetic field for there to be a changing electric field. Home work : 19 of 30 19 Which of the following statements is false? A. An electric current always flows in a direction from positive to negative charges, and the magnetic force is always in the direction of the electric force. B. A magnetic field surrounds all magnetic objects. C. The flow of electric current creates a magnetic field. D. The flow of electric current changes the motion of a charge Home work : 20 of 30 20 How can we detect an electric field? 6 The electroscope is an instrument for measuring the potential difference between two 82157476af