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| **Electrostatics**     |  |  | | --- | --- | | Question | Final Answer | | 1. [Electrostatic Force] Determine the force between two free electrons spaced 0.1nm apart. | 23nN | | 1. [Electrostatic Force] Two equally charged balls are 4cm apart and repels each other with a force of 5.063. Compute the charge on each ball. |  | | 1. [Electrostatic Force] Two point charges are 3m apart and their combine charges is . If the repulsive force between the two point charges is 0.189N, determine their charges. |  | |  |  |     **AC Circuits**   |  |  | | --- | --- | | Question | Final Answer | | 1. A circuit consists of a 20 resistor, a power source of 50Hz and an inductor of inductance 47mH. If the power source has a peak voltage of 340V, determine the rms voltage, the inductive reactance and the impedance of the circuit. |  | | 1. A circuit connected to a 240V source has an impedance of 25 and a current-voltage phase angle of , determine the average power. | 2.077kW | |  |  | |  |  | |