Benha University
Faculty of Engineering at Shoubra
Electrical Engineering Department
$3^{\text {rd }}$ year Electrical power
High Voltage Engineering (1) Sheet (5A), 2015
1)Compute the ground resistance for a hemisphere of $0.5,1$ and 2 m diameter, at distances $2 \mathrm{~m}, 10 \mathrm{~m}$ and 100 m from the center of the sphere. Present the results in both tabular and graphical formats and for different soil composition.
2)Calculate the ground resistance and the overlapping coefficient for the grounding system shown below in each figure, given that the earth resistivity $\rho=100 \Omega . \mathrm{m}$, the length of the driven rod is 8 m , and its diameter is 6 cm . Discuss your results.


Fig. 1


Fig. 3


Fig. 5


Fig. 2


Fig. 4


Fig. 6
3) If the earth resistance of a driven $\operatorname{rod}$ is $5 \Omega$, and its diameter is 5 cm , Calculate the length of the driven rod, given that the earth resistivity $\rho=100 \Omega$.m.

