



**Faculty of Electrical & Electronics Engineering
Antenna & Propagation**

Name: _____

ID: _____

Section: _____

Date: _____

Tutorial

- 1) Design a five turn helical antenna which at 300 MHz operates in the axial mode and possesses circular polarization in the major lobe. Determine,
 - a) Near optimum circumference (in λ and meter).
 - b) Spacing (in λ and meter) for near optimum pitch angle design.
 - c) Input impedance.
 - d) Half power beamwidth and first null beamwidth.
 - e) Directivity (dimensionless and in dB).
 - f) Axial ratio.

- 2) Design an end fire polarized helix antenna having a half-power beamwidth (HPBW) of 45° , pitch angle is 13° , circumference of the helix is 60 cm at a frequency operation of 500 MHz. Determine,
 - a) Number of turns needed.
 - b) Diameter of a turn on the helix antenna.
 - c) Total height of helix antenna.
 - d) Directivity in decibel.
 - e) Axial ratio.



Tutorial by

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