Antennas and Wave propagation

Important Questions for Final exams:

Unit-I

1. With the help of neat diagrams explain the principle of radiation mechanism in antennas.(one wire, two wire, Dipole)
2. Explain the current distribution on a thin-wire antenna.
3. Explain Radiation patterns of Isotropic, Directional, Omni directional antennas.
4. Explain about principal plane patterns.
5. Define the terms: i) Effective length. ii) Effective aperture area. iii) beam efficiency. iv) half-power beam width. v) Beam efficiency. vi) Radiation Intensity. vii) Gain. viii) Resolution. ix)Directivity. x)Beam area& Beam solid angle.
6. Describe about the Main lobe, sidelobes and backlobes of Radiation pattern.
7. Give the classification of Poarization

Unit-IV

1. Explain construction details and radiation patterns of travelling wave antenna.
2. Describe the characteristics of long wire travelling wave antennas and sketch their patterns for different lengths.
3. Compare the requirements and radiation characteristics of resonant and nonresonant radiators?
4. Explain the salient features, advantages, limitations and applications of Microstrip Antennas.
5. Describe working of Rhombic antenna with its design equations Radiation patterns.

6. Explain the working of helical antenna in normal mode and axial mode?

Unit-V

1. Briefly explain about Flat sheet Reflectors.
2. Briefly explain about Corner Reflectors.
3. Explain in detail about pyramidal horn antenna.
4. Explain the design parameters of parabolic reflector antenna
5. Discuss about Dielectric and metal Lens Antennas and their applications.
6. With reference to paraboloids, explain the following: i) f/D ratio. ii) Spill over and aperture efficiency. iii) Front to back ratio. iv) Types of feeds(cassegrain feed, offset-feed).

v) Aperture blocking.

7. Describe the directivity, gain and radiation pattern measurements of an antenna

Unit-VI

1. Describe briefly the salient features of ground wave propagation.
2. Explain in detail about sky wave propagation.
3. Explain in detail about space wave propagation.
4. Write a short note on: i) MUF. ii) Virtual Height. iii) Wave tilt. iv) Multihop Transmission.

v) Fading. vi) Critical frequency. vii) Skip Distance. Viii) Surface waves. ix) LUHF.

x) Optimum frequency.

5. Explain in detail about Tropospheric wave propagation.