

B.Tech III Year 5th Semester

Year(2022)

Branch ECE

Subject : Antenna

Class test : II

Time : 1Hour

M.M : 20

Note : Attempt All question

1: Define Hertz antenna.

2: Show that the refractive index of ionosphere, in absence of magnetic field and collision is

given by
$$\mu = \sqrt{1 - \left(\frac{81N}{f^2}\right)}$$

3: A television transmitting antenna mounted at a height of 120m radiates 15kW of power equally in all directions in azimuth at a frequency of 50MHz. Calculate:

- (i) Maximum line of sight range (ii) the field strength at a receiving antenna mounted at a height of 16m at a distance of 12Km and (iii) the distance at which the field strength reduces to 1m V/m.

4: With help of a neat diagram explain the rhombic antenna and also write four characteristics.

5: Calculate the directivity in dB of 25 turn Helix, having pitch angle of 14° and circumference equal to one wavelength.