



R20 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

Subject code:3P6DB

B.Tech VI Semester Regular Examinations, June/July 2023

ANTENNAS AND WAVE PROPAGATION

(Electronics and Communication Engineering)

Maximum Marks: 70

Date:24.06.2023 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

- 1 Outline the radiation pattern of isotropic antenna
- 2 Compare half power beam width and first null beam width.
- 3 List out applications of folded dipole.
- 4 Design basic Yagi Uda antenna structure.
- 5 Elucidate limitations of strip antennas.
- 6 Mention the advantages of parabolic reflector antenna.
- 7 Distinguish broad side and end fire arrays.
- 8 Define Near and Far Fields
- 9 Compare Space Wave and surface wave propagation.
- 10 Relate MUF and critical frequency.

(10x2M=20 Marks)

Part-B

Answer All the following questions.

- 11 Analyze radiation patterns of Isotropic antenna, Omni-directional antenna and Directional antennas. [10]
OR
- 12 Analyze quarter wave monopole antenna in detail. [10]
- 13 Derive an expression for L and θ of horn antenna. [10]
OR
- 14 Explain Yagi-Uda antenna and derive the parameters. [10]
- 15 Analyze the feeding methods of parabolic reflectors. [10]
OR
- 16 Determine the features of micro strip antennas. [10]
- 17 Apply the knowledge of antenna arrays to find the expression for directivity of broad side array. [10]
OR
- 18 Elucidate the expression for directivity of end fire array. [10]
- 19 Describe the structure of Ground wave propagation. [10]
OR
- 20 Discuss the effect of atmosphere on space wave propagation. [10]