Code No.: EC602PC | R20 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
III–B.TECH–II–Semester End Examinations (Regular) - May- 2023
ANTENNAS AND WAVE PROPAGATION
(ECE)

[Time: 3 Hours] **[Max. Marks: 70]**

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

PART-A **(20 Marks)**

1. a) Define Antenna Efficiency. [2M]
   b) Distinguish between directive gain and power gain. [2M]
   c) What is Radiation Pattern? [2M]
   d) What are the sources of errors in antenna measurements? [2M]
   e) Draw the Helical Antenna with all parameters. [2M]
   f) Write a short note on folded dipole. [2M]
   g) Describe the phenomenon of corner reflector with a neat diagram. [2M]
   h) Write the applications of microstrip antennas. [2M]
   i) What is meant by duct propagation? [2M]
   j) Define Skip Distance. [2M]

PART-B **(50 Marks)**

2. Derive the relation among directive gain, effective length and radiation resistance. [10M]

OR

3. Discuss about the current distribution of short dipole thin wire antenna. [10M]

4. Compare end fire and broadside array. [10M]

OR

5. Describe the measurement of antenna gain using 3 antenna methods. [10M]

6. Design Yagi Uda antenna of six elements to provide a gain of 12dB if the operating frequency is 400MHz. [10M]

OR

7. Derive the expression for E field radiated by half wave dipole. [10M]

8. Write the advantages and limitations of Microstrip Antennas. [10M]

OR

9. Explain the radiation mechanism of Microstrip antenna. [10M]

10. Explain D, E & F layers in case of ionosphere. [10M]

OR

11. Illustrate the phenomenon and effect of reflection in radio waves by earth's surface. [10M]

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