GIET UNIVERSITY, GUNUPUR – 765022
M. Tech (Second Semester Examinations) – October' 2021
MPCEC2010 - ANTENNAS AND RADIATING SYSTEMS
(E.C.E)

Time: 2 hrs   Maximum: 50 Marks

(The figures in the right hand margin indicate marks)
PART – A

Q.1. Answer *ALL* questions   (2 x 10 = 20)

   a. What is meant by Polarization?
   b. Define antenna efficiency?
   c. What are Electrically Small loop antennas?
   d. List out the expression of beam width for broad side array and end fire array.
   e. Define Huygen's Field Equivalence principle.
   f. What are the advantages and disadvantages of micro strip antenna?
   g. Differentiate between rectangular and circular patch.
   h. Define MIMO. Write its advantages.
   i. Differentiate between parabolic reflector and plane reflector.
   j. Differentiate between H-plane and E-Plane

PART – B   **(6 x 5 = 30 Marks)**

Answer *ANY FIVE* questions   Marks

2. Derive an expression for the power radiated by the current element and calculate the radiation resistance.   (6)

3. Explain the principle of operation and applications of folded dipoles.   (6)

4. Obtain the expression for the field produced by TWA and compare its radiation with resonant antenna.   (6)

5. Explain the array of N- sources of equal amplitude and spacing- Broad side case   (6)

    i. Direction of pattern maxima

    ii. Direction of pattern minima

    iii. Beam width of major lobe

6. Differentiate between horn and conical antenna.   (6)

7. Explain the radiation from   (6)

    i.   a rectangular aperture?
    ii.   a Huygen's source?

8. Explain the radiation mechanism of parabolic reflector antenna with proper expressions. (6)

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