Department of Computer Science & Engineering
School of Engineering Sciences & technology
Jamia Hamdard
Even Semester Examination: 2023 (Lateral Entry)

Time: 3 Hrs **Marks: 75**

Subject Name: Antenna and Propagation **Subject Code: BTECE 406**

Section A

Note: All the Questions are Compulsory. Each question carry equal marks **[7 x 5 marks = 35 marks]**

Q.No	Question	CO	BL
Q1.	What is a dipole? What are different types of dipole antenna?	CO2	L2
Q2.	Explain the concept behind development of Huygen's Principle with the help of a diagram.	CO3	L3
Q3.	For a given antenna system, what is the near and far field regions?	CO1	L2
Q4.	With the help of a suitable figure, explain the Babinet's principle	CO3	L3
Q5.	With the help of a suitable diagram, draw and explain the working of a Yagi-Uda and Log Periodic antenna?	CO4	L3
Q6.	What are different types of Horn antenna?	CO4	L1
Q7.	For an infinitesimal dipole antenna, determine the electric field. Assume the related conditions?	CO2	L4

Section B

Note: Attempt any four questions. Each question carry equal marks **[4 x 10 marks = 40 marks]**

Q. No	Question	CO	BL
Q1.	What is an antenna? How does antenna radiate signals from one point to another? What are the different types of antenna used in practice?	CO1	L2
Q2.	Derive the mathematical relationship between transmitted and received power? What is this relationship called? A radio link has a 15 W transmitter connected to an antenna of 2.5m^2 effective aperture at 5GHz. The receiving antenna has an effective aperture of 0.5m^2. The line of sight between the two antennas is 15 km. find the power delivered to the receiver?	CO2	L5
Q3.	For a given antenna, draw the radiation pattern and explain different parts of the pattern?	CO1	L2
Q4.	How is a log spiral antenna developed?	CO3	L6
Q5.	Explain in detail the different design concepts of an antenna? What are the challenges associated with it	CO1	L3
Q6.	Write a short note on four two of the following: a) Beamforming b) Modes of radio wave propagation c) Woodward Lawson method d) Microstrip antenna	CO5	L1

BL – Bloom's Taxonomy Levels

(1- Remembering, 2- Understanding, 3- Applying, 4- Analyzing, 5- Evaluating, 6- Creating)

CO-Course Outcomes