Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name : Antennas & Wave Propagation

Subject Code : 4TE06AWP1 **Branch: B.Tech (EC)**

Semester : 6 **Date : 25/04/2018** **Time : 02:30 To 05:30** **Marks : 70**

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 **Attempt the following questions:** **(14)**

a) Define : Radiation Pattern of an antenna
b) What is an isotropic radiator?
c) Define: Radiation Intensity
d) What do you interpret by antenna bandwidth?
e) What is Antenna Gain?
f) What is circular polarization? What are its types?
g) What do you interpret by Half-Power Beam Width (HPBW)?
h) What is Sky wave propagation?
i) What does Fading term refer in Wireless Communication?
j) What are the two groups of dielectric lenses?
k) Define: Skip distance in terms of wave propagation.
l) What is Antenna Diversity in terms of Smart Antenna?
m) What is Super refraction?
n) What is the value of Characteristics impedance of free space?

Attempt any four questions from Q-2 to Q-8

Q-2 **Attempt all questions** **(14)**

(a) Derive equation of Electric Field Intensity (E) for two isotropic point sources of same amplitude and phase. **07**

(b) Describe Dolph-Tchebyscheff optimum distribution for linear arrays with non-uniform amplitude distributions. **07**

Q-3 **Attempt all questions** **(14)**

(a) Describe Radiation Resistance of Loop Antenna **07**

(b) Describe Helical Antenna Geometry **07**

Q-4 **Attempt all questions** **(14)**

(a) Describe working principle, advantage and disadvantages of Microstrip Antenna **07**

	(b)	Explain Babinet's principle of slot antenna.	**07**
Q-5		**Attempt all questions**	**(14)**
	(a)	Describe corrugated Horn Antenna	**07**
	(b)	Explain artificial dielectric lens antenna	**07**
Q-6		**Attempt all questions**	**(14)**
	(a)	Derive Friis Transmission Formula	**07**
	(b)	Describe experimental set up for measurement of antenna gain	**07**
Q-7		**Attempt all questions**	**(14)**
	(a)	Describe Rayleigh Fading	**06**
	(b)	Describe log-periodic antenna	**08**
Q-8		**Attempt all questions**	**(14)**
	(a)	Describe Ground Wave Propagation	**07**
	(b)	Explain characteristic of Ionosphere layers	**07**