

<b>Scheme of Valuation/Answer Key</b>			
(Scheme of evaluation (marks in brackets) and answers of problems/key)			
<b>APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY</b>			
SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018			
<b>Course Code: EC306</b>			
<b>Course Name: Antenna &amp; Wave Propagation</b>			
Max. Marks: 100			Duration: 3 Hours
1	a	Beam solid angle (4) directivity of an antenna (4)	8
	b	Equivalent circuit (4) Radiation resistance (3)	7
2	a	Far field pattern of a half wave dipole antenna – Explanation (4) Derivation of fields (2) Nulls (2) BWFN(2)	10
	b	Explanation	5
3	a	(2+2+2+2)	8
	b	Concept of retarded potential (7)	7
4		Steps for deriving angles for finding lobes and nulls (6) Major lobe , minor lobes ,nulls (3) BWFN (3) Radiation pattern diagram (3)	15
5	a	Beam steering concept 5 Figure 2 Equations 3	10
	b	Explanation	5
6	a	Explanation 5 Figure 5	10
	b	Explanation with figure	5
7	a	Explanation 10 Design steps 10	20
8		Derivation for effective refractive index (5), critical frequency(5) , maximum usable frequency (5) and skip distance (5)	20
9	a	Normal mode (5) Axial mode helical antenna (5)	10
	b	Derivation for LOS distance	10