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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Electronics &amp; Electrical Engg.) (2012 to 2017) (Sem.-7)

B.Tech.(Electrical &amp; Electronics Engg.) (2013 &amp; Onwards)

**ANTENNA & WAVE PROPAGATION**

Subject Code : BTEEE-801

M.Code : 71962

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

1. Answer briefly :

- a) Define effective height.
- b) State field principle equivalence.
- c) What do you understand by the term omnidirectional antenna?
- d) What is the structure of ionosphere?
- e) Define antenna efficiency.
- f) What is the principle of pattern multiplication?
- g) What is dipole antenna?
- h) Write the expression for current distribution of half wave dipole.
- i) Define skip distance.
- j) Define virtual height.

### SECTION-B

2. What is an antenna array? Explain in detail the behaviour of broadside antenna array.
3. Discuss the principle, construction and working of Horn antenna.
4. What is polarization? Discuss the condition of different type of polarization.
5. Discuss the reflection and refraction of the wave by ionosphere.
6. Discuss the rectangular and circular aperture antenna.

### SECTION-C

7. Explain the principle of communication by troposcatter.
8. Derive the relation between MUF and skip distance.
9. Derive the expression for the radiation resistance of half wave dipole.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**