Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov/Dec – 2017**

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|  |  |  |  |
| **Code :** | **14EC2020** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ANTENNA THEORY AND WAVE PROBAGATION** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | | **Course**  **Outcome** | **Marks** |
| 1. | a. | Give the relation between Gain and Efficiency. | | CO1 | 1 |
| b. | State Reciprocity principle. | | CO1 | 2 |
| c. | Draw the Thevenin’s equivalent of an antenna. | | CO2 | 3 |
| d. | What is the radiation resistance of current element whose overall length is λ/50? | | CO2 | 4 |
| e. | Obtain the radiation resistance of elementary dipole antenna. | | CO2 | 10 |
| (OR) | | | | | |
| 2. | a. | Define radiation intensity. | | CO1 | 2 |
| b. | What is the use of capacitance hat and top loading coil for short antennas? | | CO2 | 3 |
| c. | Discuss about the current distribution in wire antenna. | | CO2 | 15 |
|  |  |  | |  |  |
| 3. | a. | Distinguish between broadside array and end fire array. | | CO1 | 5 |
|  | b. | Draw the structure of a super directive antenna and explain. | | CO2 | 15 |
| (OR) | | | | | |
| 4. | a. | Describe maximum output design of a rhombic antenna. | | CO2 | 15 |
|  | b. | Explain is the geometry of Yagi-Uda antenna. | | CO1 | 5 |
|  |  |  | |  |  |
| 5. | a. | Discuss about Feeding of slot antennas. | | CO2 | 15 |
|  | b. | Differentiate slot and complementary dipole antenna. | | CO1 | 5 |
| (OR) | | | | | |
| 6. |  | Discuss about the principle, types and uses of lens antennas. | | CO2 | 20 |
|  |  |  | |  |  |
| 7. |  | Explain about the radiation pattern of a two element array. | | CO2 | 20 |
| (OR) | | | | | |
| 8. |  | | Obtain the relation between dipole and slot impedances and show the equivalence of fields of slot and complementary. | CO1 | 20 |
|  | | |  |  |  |
|  | | | **Compulsory:** |  |  |
| 9. | a. | | Detail about fading and its types | CO2 | 10 |
|  | b. | | Discuss about Maximum Usable Frequency | CO1 | 10 |

ALL THE BEST