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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **14EC3043** | **Duration :** | **3hrs** |
| **Sub. Name :** | **RF MEMS** | **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. | What is the need of RF MEMS switch and explain in detail about the switch parameters. | CO1 | **10** |
| b. | Discuss about the micro machined passive inductors | CO1 | **10** |
| **(OR)** | | | | |
| 2. | a. | Discuss the effect of Inductor layout in RF MEMS inductor | CO1 | **14** |
| b. | What are bi-stable relays? | CO1 | **6** |
| 3. | a. | Discuss electrostatic switching in detail with neat diagram. | CO1 | **12** |
|  | b. | What are the various RF MEMS components and discuss their merits and demerits? | CO1 | **8** |
| **(OR)** | | | | |
| 4. | a. | Describe a micro-mechanical filter using comb drives in detail. | CO2 | **10** |
|  | b. | Explain the nature of propagation of wave in piezoelectric substrates? | CO2 | **10** |
| 5. | a. | Elaborate the working of Area tuning capacitors and its quality factor. | CO1 | **10** |
|  | b. | Design any RF transducer and explain the propagation of waves in the device with its capabilities, limitations and applications | CO2 | **10** |
| **(OR)** | | | | |
| 6. | a. | Explain in detail about switched delay line and polymer based MEMS phase shifter with neat diagram and equations | CO3 | **20** |
| 7. | a. | Explain in detail about the microshield and membrane supported transmission lines with neat diagram. What are its merits and demerits over micromachined transmission lines | CO4 | **14** |
|  | b. | Compare MEMS and conventional phase shifter | CO3 | **6** |
| **(OR)** | | | | |
| 8. | a. | What is a reconfigurable antenna and how it is useful? | CO4 | **8** |
|  | b. | Explain the reliability thermal issues of microstrip antennas. | CO4 | **12** |
|  | | **Compulsory:** |  |  |
| 9. | a. | How does micromachining helps in improving the performance of the antenna. Explain in detail | CO4 | **20** |

ALL THE BEST