

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER IV (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2742702

Date:04/05/2016

Subject Name: RF INTEGRATED CIRCUITS

Time:10:30 am to 01:00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain RF behavior of Passive components in detail. **07**
(b) Describe mathematical analysis of transmission line. **07**
- Q.2** (a) Write short note on high frequency limitations of BJT and MOSFET. **07**
(b) Describe the function of interconnectivity network. List out the properties and applications of interconnectivity network. **07**
- OR**
- (b) Write short note on Microstrip transmission line. Also explain special termination conditions of transmission line. **07**
- Q.3** (a) Explain Impedance matching using discrete components. **07**
(b) Describe the design flow of Lumped filter with suitable example. **07**
- OR**
- Q.3** (a) Explain Impedance matching using microstrip line matching network. **07**
(b) Describe the design flow of distributed filter with suitable example. **07**
- Q.4** (a) Explain small signal amplifier design with suitable example. **07**
(b) Describe the design procedure of low phase noise oscillator. **07**
- OR**
- Q.4** (a) Explain power amplifier design with suitable example. **07**
(b) Write short note on PLL Synthesizer and Direct-digital Synthesizer. **07**
- Q.5** (a) Write short note on RF active components. **07**
(b) Write short note on RF mixer. **07**
- OR**
- Q.5** (a) Write short note on (i) broadband high power multistage amplifier **07**
(ii) Low noise amplifier
(b) Describe the Image reject and Harmonic mixers in detail. **07**
