

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME - SEMESTER-IV(NEW) EXAMINATION – SUMMER - 2017**

**Subject Code:2742702****Date:03/05/2017****Subject Name: RF Integrated Circuits****Time:02:30 pm to 05:00 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 high frequency limitation of BJT and MOSFET. **07**  
(b) Explain the analysis of transmission line. **07**
- Q.2** (a) Write short note on VGA amplifier. **07**  
(b) What is scattering parameters? Derive scattering parameters of 3-dB directional coupler. **07**
- OR**
- (b) Write short note on micro strip transmission line. **07**
- Q.3** (a) Write short note on tuned resonant circuits. **07**  
(b) Compare lumped filter with distributed filter. **07**
- OR**
- Q.3** (a) Write short note on micro strip line matching network. **07**  
(b) Compare crystal and saw filter. **07**
- Q.4** (a) Explain stability consideration in RF amplifier. **07**  
(b) Explain designing of small signal amplifier. **07**
- OR**
- Q.4** (a) Write short note on amplifier classes of operation and biasing network. **07**  
(b) Explain concept of matching in amplifier. **07**
- Q.5** (a) Explain designing of low phase noise oscillator. **07**  
(b) Write short note on active mixer. **07**
- OR**
- Q.5** (a) Write short note on synthesizer. **07**  
(b) Write short on harmonic mixer. **07**

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