

www.FirstRanker.com

Code: 13A04804

www.FirstRanker.com

B.Tech IV Year II Semester (R13) Regular Examinations April 2017 **RF INTEGRATED CIRCUITS**

(Electronics and Communication Engineering)

Max. Marks: 70

Time: 3 hours

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
 - (a) What are the conditions for resonance in parallel RLC network?
 - (b) What is skin effect?
 - (c) Define reflection coefficient.
 - (d) State the relation between bandwidth and rise time for first order system.
 - (e) Write a note on excess noise.
 - (f) What is the advantage of sub sampling mixer?
 - (g) List the applications of PLL.
 - (h) Why is the isolator placed at the output of the amplifier?
 - (i) Write a note on ring oscillator.
 - (j) Define frequency synthesizer.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Explain in detail about the architecture of Radio Frequency system.

OR

3 Explain transmission medium and reflections in radio frequency system.

UNIT – II

- Prove that a long channel MOSFET transconductance depends only on the square root of bias current.
 OR
- 5 Discuss the method of short circuit time constant for estimating the bandwidth of the system

UNIT – III)

6 Discuss in detail about FLICKER noise in MOSFETs.

OR

7 Briefly explain the mixer design considerations.

UNIT – IV

8 Explain in detail about class F amplifiers.

OR

9 Explain about different negative resistance oscillators with neat sketch.

UNIT – V

10 Explain the method of frequency synthesis using fractional – N synthesizers.

OR

11 Draw the block diagram of UMTS radio architecture and explain in detail.
