

Total No. of Questions : 10]

SEAT No. :

P5077

[Total No. of Pages : 2

**[4959]-1095**  
**B.E. (E&TC)**  
**RF: CIRCUIT DESIGN**  
**(2012 Pattern) (Elective - III) (Semester - II)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 Q.7 or Q.8, Q.9 or Q.10.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*

- Q1)** a) Draw and explain Chip resistor & Chip Capacitor. **[5]**  
b) Explain Accuracy of OCτs and accuracy of SCτs. **[5]**

OR

- Q2)** a) Describe with suitable example, relation between Rise time and Bandwidth. **[5]**  
b) Describe Neutralization and unilateralization. **[5]**

- Q3)** a) What is the standard recipe for computing bandwidth? **[5]**  
b) Discuss the method of open circuit time constants to estimate the bandwidth. **[5]**

OR

- Q4)** a) Explain Bandwidth enhancement techniques. **[5]**  
b) Describe in brief stabilization methods. **[5]**

- Q5)** a) Discuss two port noise parameters. **[8]**  
b) With suitable diagram explain Single ended LNA and its design parameters. **[8]**

**P.T.O.**

OR

- Q6)** a) Explain LNA Topologies with suitable diagrams. [8]  
b) With suitable diagram describe Differential ended LNA and its design parameters. [8]

- Q7)** a) What are the challenges with purely linear oscillator? [6]  
b) How we can use describing functions to analyze oscillators? [6]  
c) Differentiate between describing function model and start up model. [6]

OR

- Q8)** a) What is describing function? Explain with suitable examples. [6]  
b) Discuss on Resonator technologies. [6]  
c) Explain with appropriate diagram basic LC Feedback Oscillator. [6]

- Q9)** a) Explain with respect to Mixer following characteristics. [8]  
i) Conversion Gain  
ii) Linearity and Isolation  
b) Describe with neat diagram single balanced Mixer. [8]

OR

- Q10)** a) Discuss how Nonlinearity systems behaves as Linear Mixer. [8]  
b) Explain Single diode mixer and double diode mixer. [8]

