

Indian Institute of Technology Delhi
Centre for Applied Research in Electronics

CRL – 732: Selected Topics in RFDT-II
Major Examination

April 29, 2008

(35 Marks)

- Q.1. Explain the working of Schottky junction diode under forward and reverse bias conditions (using appropriate band-diagrams). Explain the Schottky effect and the influence of interface states on potential barrier. Compare an ideal Schottky junction with a PN junction. **[15]**
- Q.2. A GaAs MESFET has a thickness of $0.4\mu\text{m}$ and a doping concentration N_d of $5 \times 10^{17} \text{ cm}^{-3}$. Calculate the pinch-off voltage given $(\epsilon_r)_{\text{GaAs}} = 13.1$. **[4]**
- Q.3. Describe the operating principles of HEMT. **[6]**
- Q.4. Explain the construction and working of PiN diode. **[6]**
- Q.5. Explain briefly the differences between JFET and MESFET. **[4]**