Thapar Institute of Engineering & Technology, Patiala

Department of Electronics and Communication Engineering

Course Code: UEC-301; **Course Name:** Analog Electronic Circuits

B.E. (ENC) (III-Sem),

Tutorial No.08

1	Find C_{de}, C_{je}, C_{π}, C_{μ} and f_T for a BJT operating at a dc collector current I_C=1mA and CBJ reverse bias of 2 V. The device has τ_f =20ps, C_{jeo}=20fF, $C_{\mu o}$=20fF, Voe=0.9V, Voc=0.5V, and m_{CBJ} = 0.33.
2	For a BJT operated at I_C=1mA, determine C_{π} and f_T if C_{μ}=2pF , β_o=100 and h_{fe}=10 at 50MHz.
3	Draw the BJT(npn) high frequency model.