

**B.E (Food Tech.) & B.E(Chem. With MBA) 1st Semester
Mid-Term Exam-II**

Subject: Electrical & Electronics Engg.

Max. Marks :25

CO ₂	Q1
CO ₃	Q2 to Q6

Q.1 (i) A 600 kVA, single phase transformer when working at unity power factor has an efficiency of 92% at full-load and also at half full-load. Determine the efficiency when it operates at unity power factor and 60% of full-load. (5)

Q2. (i) Define: PIV, Breakdown Voltage, Depletion Region.

(iii) Explain working of Zener diode as voltage regulator.

(3,4)

Q3. Derive the equation for collector current for CE configuration. (4)

Q.4 Simplify the following expression :

$$y = \bar{B}C + \bar{A}BC \quad (3)$$

Q5. Using k-Map reduce the following equation to minimum SOP form

$$x = ABC\bar{C} + \bar{A}B + \bar{A}\bar{B} \quad (3)$$

Q6. What is ripple factor? Calculate it's value for half-wave & full-wave rectifier. (3)