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## B.Tech I Year (R13) Supplementary Examinations December 2017 <br> BASIC ELECTRICAL \& ELECTRONICS ENGINEERING <br> (Common to CSE and IT)

Time: 3 hours

## Answer all the questions <br> (Use single answer booklet only) <br> ***** <br> PART - A <br> UNIT - I

4 A two part network has the following $z$ - parameters. Find the $h$ - parameters and transmission parameters: $Z_{11}=1 \Omega ; Z_{12}=Z_{21}=-02 \Omega ; Z_{22}=0.6 \Omega$.
UNIT - III

Explain in detail the principle of operation and characteristics of DC motors. OR
With a neat diagram, explain the construction of 3 - phase induction motor.

## PART - B

## UNIT - I

 Explain the operation of forward bias and reverse bias PN junction Diode.OR
Explain the operation of $\pi$ section filter with bridge rectifier and also derive an expression for its stability factor.

## UNIT - II

Draw and explain the input and output characteristics of a transistor in CC configuration.
OR
Describe the kind of operation that takes place in the enhancement mode MOSFET. How does this differ from depletion mode type?

> UNIT - III

Explain the working of Colpitts oscillator and derive an expression for frequency of oscillation for Colpitts oscillator.

OR
Give the characteristics of an ideal Op-Amp.

