17/05/19

Roll No. | | | | | | | | | | |

B.E. / B.Tech.(Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2019

COMPUTER SCIENCE AND ENGINEERING BRANCH

THIRD SEMESTER

EC 8303 – ELECTRONIC DEVICES AND CIRCUITS FOR COMPUTER ENGINEERS

(REGULATIONS 2012)

Time: 3 Hours Max.marks: 100

Answer ALL Questions

Part-A (10x2=20 Marks)

1. List the steps of nodal analysis.
2. A circuit consists of two resistors 3 ohm and 6 ohm in parallel. Find the equivalent resistance.
3. State Norton's theorem.
4. For a three phase star connection write the relationship between line voltage and phase voltage.
5. Define avalanche breakdown.
6. Define diffusion current.
7. Draw the basic circuit of full wave rectifier.
8. List the parameters to describe the performance of CS amplifier.
9. Define resolution for an n-bit DAC.
10. List the characteristics of an ideal OP-AMP.

Part-B (5x16=80 Marks)

11.(i)List the steps of loop analysis. State Kirchoff's laws. (9)
(ii)How does the series circuit behave as a voltage divider? (7)

12.(a)(i)State and prove maximum power transfer theorem. (8)
(ii)Derive the equation for power and power factor of RL series single phase circuit. (8)

OR

12.(b)(i)Assume that a network is in Delta form. How do you obtain its equivalent Wye form? Write the derivation. (8)
(ii)State and prove superposition theorem. (8)

13.(a)Explain the VI characteristics of Zener diode. Explain the function of PN junction diode under forward and reverse bias conditions. (16)

OR

13.(b)Draw the suitable diagrams to explain the working of npn BJT. Determine the h-parameters from the characteristics of CE configuration. (16)

14.(a) Draw the circuit diagram of CE amplifier and derive the expression for its voltage gain, current gain, input admittance and output admittance. (16)

OR

14.(b)From the ripple voltage waveform of capacitance input filter derive the expression for its ripple factor. (16)

15.(a)Design adder, subtractor, non-inverting amplifier, integrator and differentiator using OP-AMP. (16)

OR

15.(b)Design the binary weighted resistor type DAC and the ladder type DAC using OP-AMP. (16)