ANDHRA UNIVERSITY
FIRST YEAR B.Sc., FIRST SEMESTER
CBCS SEMESTER SYSTEM WITH EFFECT FROM 2015-2016
Subject: ELECTRONICS
Paper I: BASIC CIRCUIT THEORY

Time: Three Hours   Maximum Marks: 75

Section A,   Answer ANY FIVE questions,   5 x 5 = 25 Marks

1. State and explain briefly Kirchhoff Voltage Law and Kirchhoff Current Law.
2. Define Power. Distinguish Apparent Power and Real Power.   What do you understand by Power Factor?
3. State and Prove Maximum Power Transfer Theorem.
4. What is Transient Response and Explain the same in case of RC Circuits.
5. What do you understand of electrical resonance?   What is the difference in Series and Parallel LCR circuits with respect to resonance?
6. Draw block diagram of CRO.
7. What do you understand by Loop Analysis and Node Analysis?
8. State and Prove any one form of the Millman's Theorem.

Section B, Answer ALL questions (Internal Choice), 5 x 10 = 75 Marks

9.a. . State and Prove The venin's Theorem.

Or

9.b.   State and Prove Superposition Theorem.

10.a.   Explain the method of solving AC and DC circuits by Kirchhoff Laws.

Or

10.b.   Explain the concept ideal & practical Voltage Source and Current Source

11.a.   Draw circuit for RC high pass filter and RC low pass filter. Explain their frequency response briefly.

Or

11.b.   Show that RC high pass circuit is differentiating circuit and low pass circuit is an integrating circuit.

12.a.   Draw the block diagram of function generator and explain the same.

Or

12.b.   How do you measure Voltage, Frequency and Phase with CRO?   Explain

13.a.   Explain the method of solving AC and DC circuits using Kirchhoff Laws.

Or

13.b.   What do you understand by Sinusoidal Voltage and Current? Define and Obtain expressions for Average Value and RMS Value.