

First / second semester BE Examination.

June / July 2019

Basic Electrical Engineering.

18ELE13/23

Max. Marks: 100.

Prepared By: Prof. Ravindra Motekar

10 State & Explain Kirchhoff's laws? (8M).

i) Current Law:

The algebraic sum of all currents meeting at any junction of an electrical ckt is zero.
ie, $\sum I = 0$



By KCL

$$I_1 + I_2 - I_3 - I_4 = 0.$$

$$\text{or } I_1 + I_2 = I_3 + I_4.$$

"At any junction of electric ckt, the sum of currents entering the node is equal to sum of currents leaving the node".

ii) Voltage Law:-

"In any closed electric ckt, the algebraic sum of all emf's & resistive drops is equal to zero.

$$\text{ie, } \sum E + \sum IR = 0.$$

All voltage rise are taken as +ve & all vltg drops are taken as -ve.



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