Enrolment No._____

HASMUKH GOSWAMI COLLEGE OF ENGINEERING, VAHELAL

MID SEMESTER EXAMINATION, SEPTEMBER-2016

Subject Code: 2130901 **Date: 26/09/2016**

Subject Name: C&N **Sem: 3RD EE**

Time: 10:00 TO 10:50 **Total Marks: 20**

Instructions:

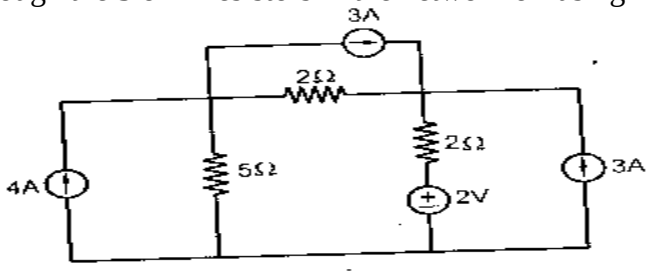
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

QUE.1 **(A)** 1.What is time constant for RL circuit? **3**
2. Define Time Invariant Network
3.Define Lumped Network

(B) Explain source transformation to obtain voltage source from current source . **3**

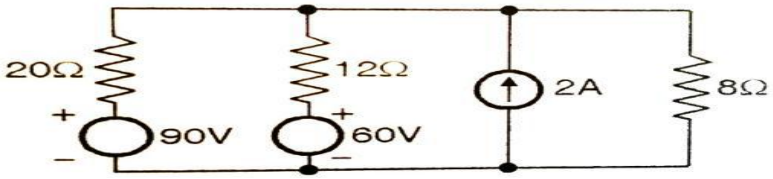
QUE.2 **(A)** Draw the characteristics and differentiate between ideal current source and actual current source **3**

(B) Find currents through the 5 ohm resistors in the network of using mesh analysis **4**



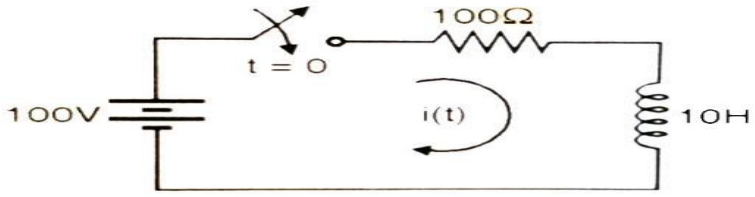
OR

(B) Find current in 20 ohm resistance in the circuit shown in figure using superposition theorem **4**



3

QUE.3 **(A)** In the circuit shown in figure, the switch 'K' is closed at t=0. Assuming no initial current through inductor. Find current at t = 0.3 sec



(B) Drive the condition for maximum power transfer to the load for AC circuit **4**

OR

QUE.3 **(A)** Explain the procedure to obtain the transient response of a first order system. **3**

(B) State and Explain Norton's Theorem **4**

********** ALL THE BEST **********