ROLL NO. | | | | | | | |

PAPER CODE: TEE 101

27/11/18

10:00

2.30 - 4.00 PM

B.TECH

MID SEMESTER EXAMINATION, 2018

( I SEMESTER )

BASIC ELECTRICAL ENGG

**Time: 1:30 Hours**

**MM: 50**

**Note:**

1. This question paper contains two sections.
2. Both Sections are compulsory.

## SECTION - A

**1**. Fill in the blanks/True- False. (1x5=5 Marks)

A Independent sources are of four types named as .....

bDuring resonance in series RLC circuit power factor will be zero value (T/F)

cIn series RLC circuit power factor is leadind that means Value of $X_C > X_L$(T/F)

d Six light bulbs are connected in parallel across 110 V. Each bulb is rated at 75 W. The current flows through each bulb is.....

eIn a series RLC circuit if quality factor Q is increased by twice then bandwidth is also increased twice (T/F)

**2**. Attempt any five. (3x5=15 Marks)

aState and explain Ohm's law. Give its limitations.

b Whatis mean by Active and Passive elements .?

c Define KCl and KVL for a circuit.

d Draw the resonance graphical curve for different values of frequency

e Define average value and rms value.

f Define bandwidth in series RLC circuit.

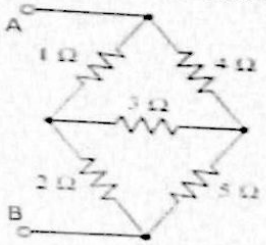
## SECTION B

Each question contains three parts a, b and c. Attempt any two parts of choice from each question.

3. (5x2=10 Marks)

a. State the statement of Superposition theorem and Norton's theorem.

b. For the below given circuit findequivalent resistance between A&B.

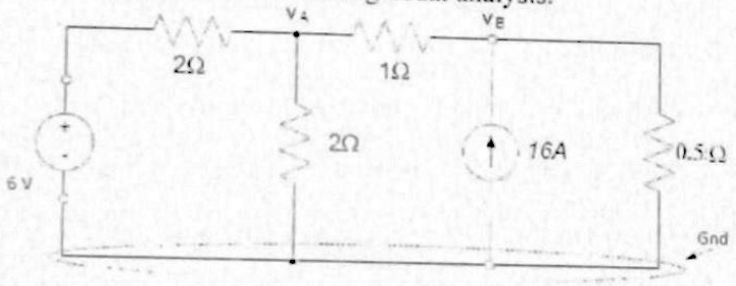



c. Derive the expression for voltage and current in series RL circuit with phasor diagram.

4. (5x2=10 Marks)

a. Define frwquency , timeperiod, quality factor and unilateral elements.

b. Find the value nodal voltages Va and Vb using nodal analysis.




d. Derive the relation for three phase star connection phase voltage and line voltage

5. (5x2=10 Marks)

a . Expalin Thevenin's theorem with an example.

b.

A coil of 2 Ω resistance and 0.01 H inductance is connected in series with a capacitor across 230 V mains. What must be the capacitance, in order that maximum current occurs at a frequency of 50 Hz? Find also the current and the voltage across the capacitor.

c. For given circuit shown below find load current for resistance $R_L$= 5 ohm.