ROLL NO:	

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY, BENGALURU

SCHOOL OF ENGINEERING

Weightage: 20 % Max Marks: 20 Max Time: 1 hr. Monday, 24th September, 2018

TEST –1

Odd Semester 2018-19 Course: **EEE 219 Network Theory** V Sem. EEE

Instruction:

(i) Read the question properly and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and Non-programmable calculators are permitted.

Part A

(3 Q x 3 M= 9 Marks)

1. Find the voltage drop across AB in the network shown in the Fig. 1 by loop analysis.

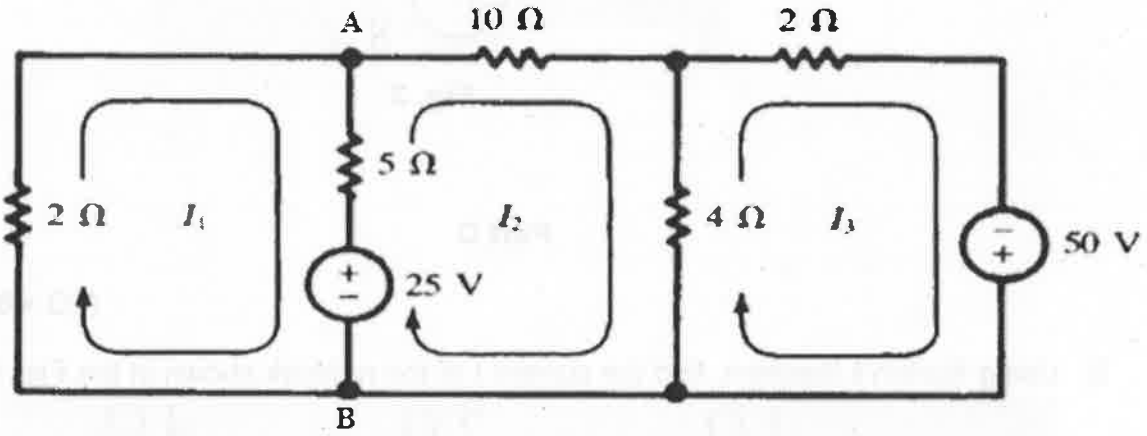

Fig. 1

2. Six equal resistors each of 4 Ω are connected as shown in Fig. 2. Find the equivalent resistance between AB.

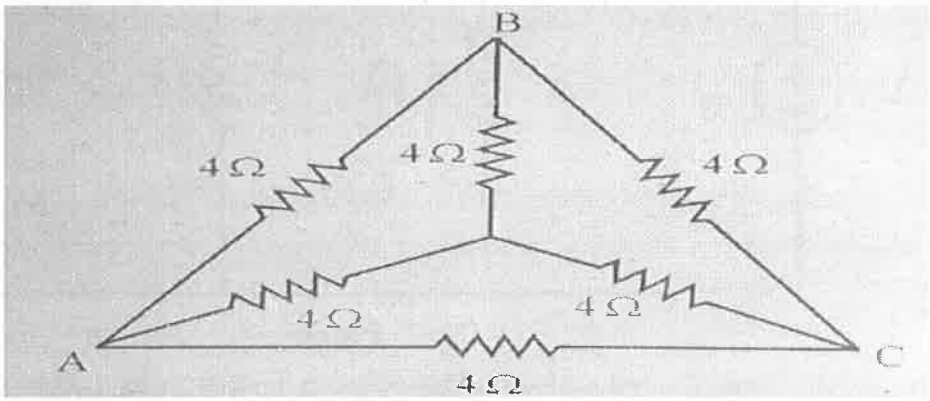

Fig. 2

3. State and explain Millman's theorem.

Part B

(1 Q x 5 M= 5 Marks)

4. Find i_x and hence verify reciprocity theorem for the network shown in the Fig. 3

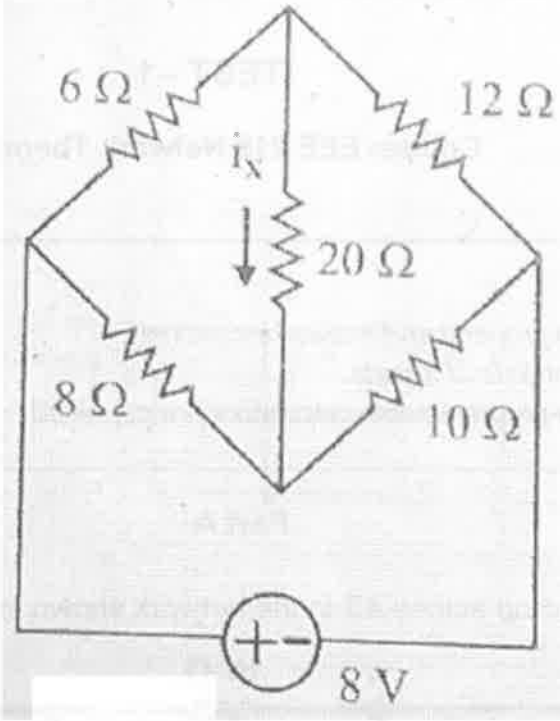

Fig. 3

Part C

(1Q x 6 M= 6 Marks)

5. Using Norton's theorem, find the current I of the network shown in the Fig. 4

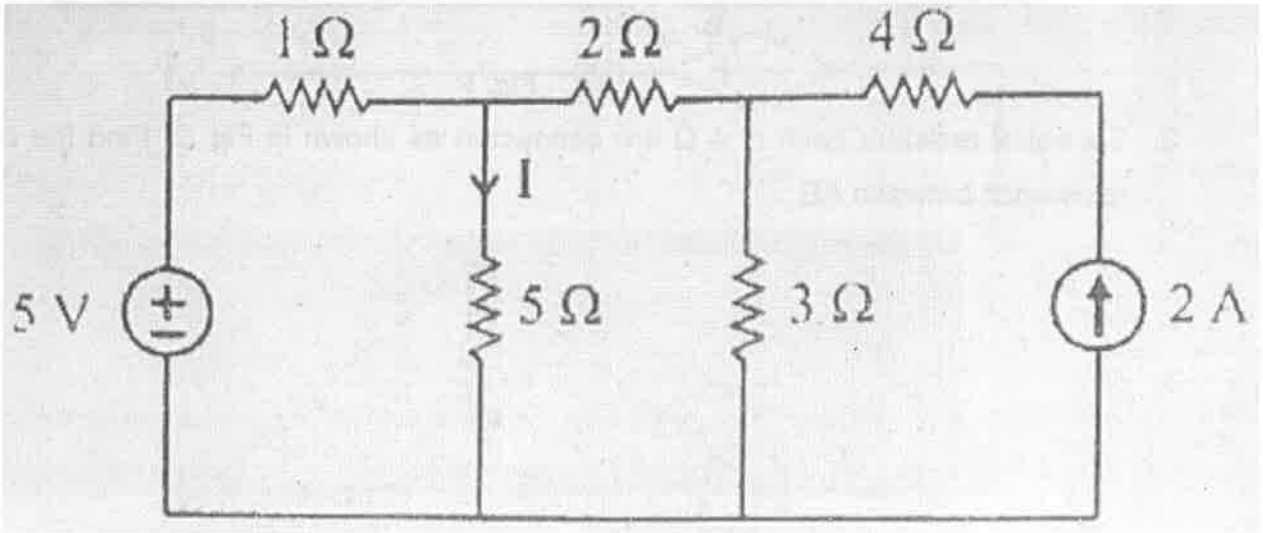

Fig. 4

ROLL NO:

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SCHOOL OF ENGINEERING

TEST 2

Odd Semester: 2018-19
Course Code: EEE 219
Course Name: Network Theory
Branch & Sem: EEE & V Sem

Date: 27 November 2018
Time: 1 Hour
Max Marks: 20
Weightage: 20%

Instructions:

(i) *Read the question properly and answer accordingly.*
(ii) *Question paper consists of 3 parts.*
(iii) Scientific and Non-programmable calculators are permitted.

Part A

Answer **all** the Questions. **Each** question carries **two** marks. (2x3=6)

1. Express z-parameters in terms of y-parameters of a two port network.

2. Explain the behavior of R, L and C for the initial condition.

Part B

Answer **all** the Questions. **Each** question carries **four** marks. (2x4=8)

3. The following equations give the relationship between voltages and currents of a two port network.

$I_1 = 0.25V_1 - 0.2V_2$

$I_2 = -0.20V_1 + 0.1V_2$

Obtain transmission parameters for the network.

4. State and explain maximum power transfer theorem.

Part C

Answer the Question. Question carries **six** marks. (1x6=6)

5. In the circuit shown in Fig. 1, the switch K is closed at t = 0, with the capacitor uncharged. Find the values of $i(0^+)$, $\frac{di}{dt}(0^+)$ and $\frac{d^2i}{dt^2}(0^+)$, for element values as follows, V = 100 Volts, R = 1000 Ω and C=1 μF.

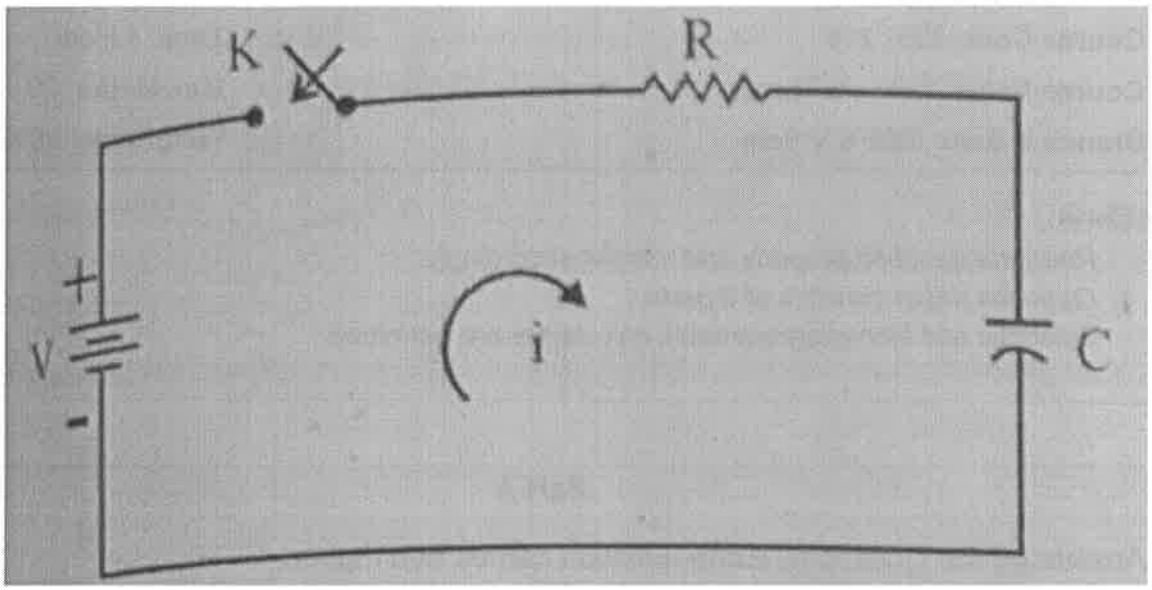

Fig. 1

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PRESIDENCY UNIVERSITY
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END TERM FINAL EXAMINATION

Odd Semester: 2018-19 | **Date**: 28 December 2018

Course Code: EEE 219 | **Time**: 2 Hours

Course Name: Network Theory | **Max Marks**: 40

Programme & Sem: EEE & V Sem | **Weightage**: 40%

Instructions:

(i) *Read the question properly and answer accordingly.*

(ii) *Question paper consists of 3 parts.*

(iii) Scientific and Non-programmable calculators are permitted.

Part A

Answer **all** the Questions. **Each** question carries **four** marks. (4Qx4M=16)

1. For the given network shown in Fig. 1, find the voltages at the nodes 1 & 2 by node voltage method.

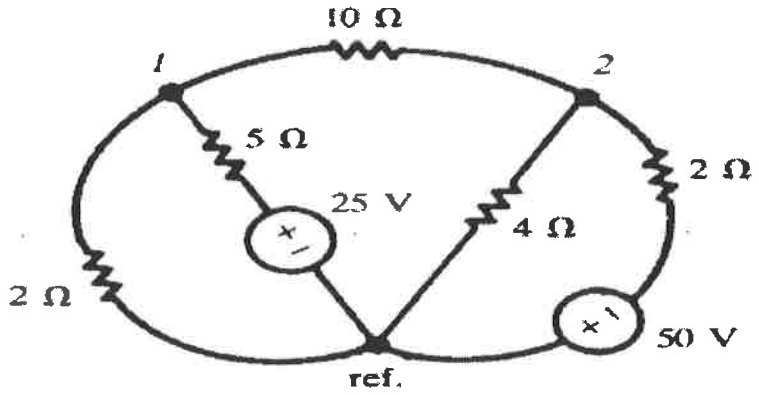

Fig.1

2. Using convolution theorem find the Laplace Inverse of the function

   $F(s) = \frac{s}{(s+1)(s+2)}$

3. Determine the initial value $f(0^+)$ for the function $F(s) = \frac{2(s+1)}{s^2+2s+5}$
4. Find the Laplace transformation of f(t) = coshbt

Part B

Answer **both** the Questions. **Each** question carries **seven** marks. (2Qx7M=14)

5. Obtain an expression for the current in the network shown in Fig. 2.

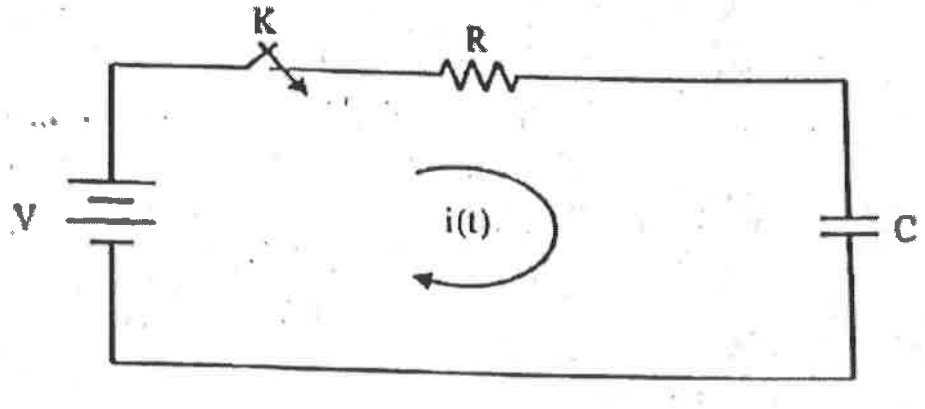

Fig. 2

6. For the circuit shown in the Fig. 3, find the current through R_L using Thevenin's theorem.

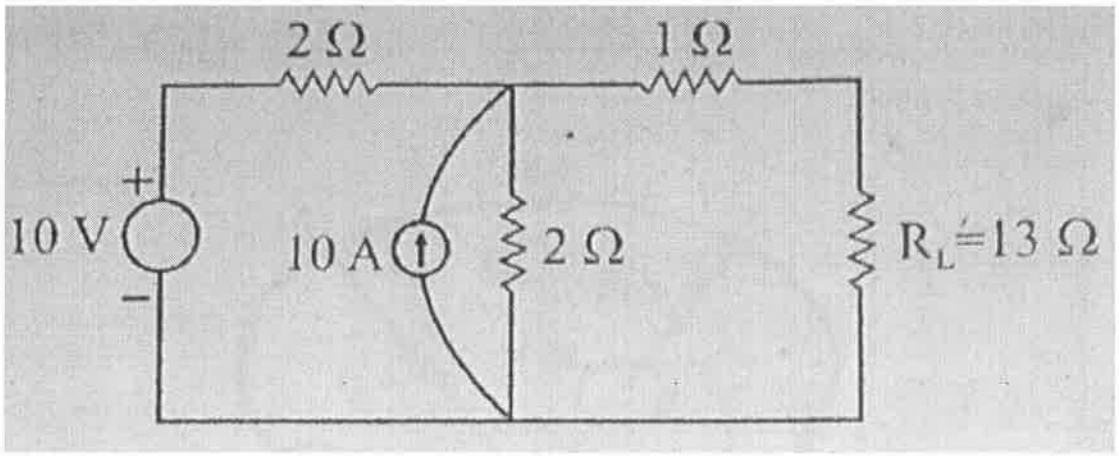

Fig. 3

Part C

Answer the Question. Question carries **ten** marks. (1Qx10M=10)

7 a) Two wattmeters are connected to measure the input to a 3 phase, 12 HP, 50 Hz, induction motor which works at a full load efficiency of 85 % and a power factor of 0.8. Find the readings of the two wattmeters. [6 M]

b) When three balanced impedances are connected in star, across a 3 phase, 415 V, 50 Hz supply, the line current drawn is 20 A, at a lagging p.f. of 0.4. Determine the parameters of the impedance in each phase. [4 M]