EE ... Engineering Circuit Lab – ...

... Exam, Sp- 2014-20...

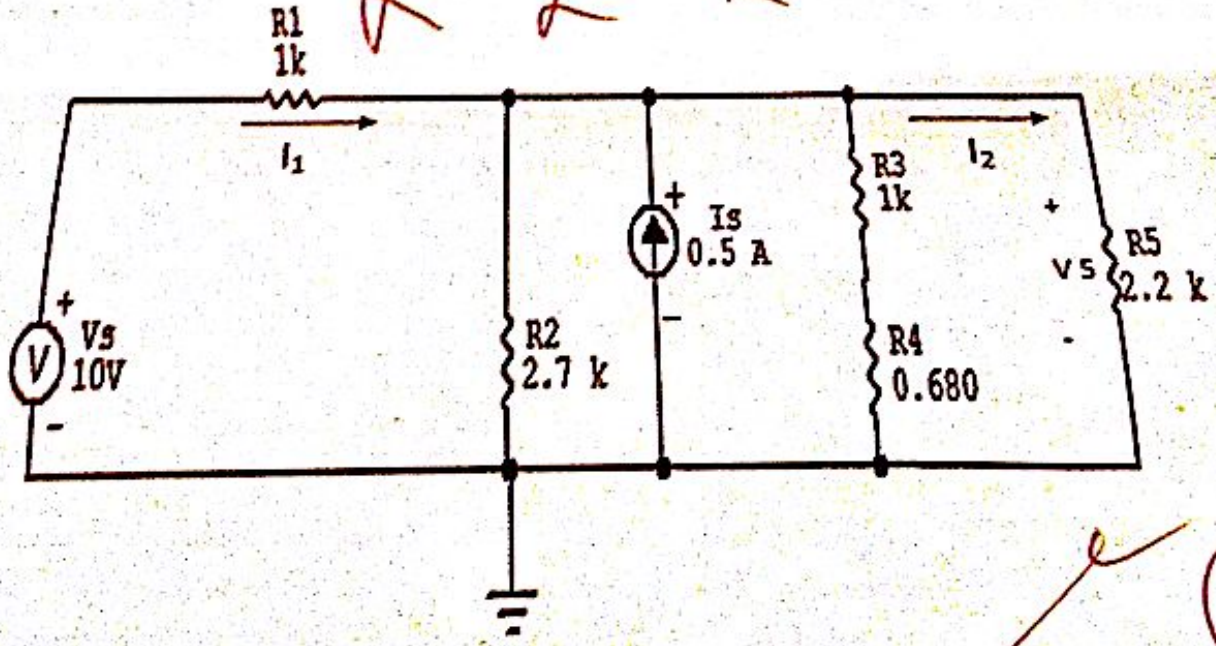
Student's Name ... Student's Number:- ...

Section :- ...

1) Please connect the following circuit, where R_1= 1 KΩ, R_2= 2.7 KΩ, R_3= 1 KΩ, R_4= 680 Ω, R_5= 2.2 KΩ, the voltage source V_s= 10 V, and the current source I_s= 0.5 A?

2) Measure I_1 , I_2, and V_5 using superposition method using the following table?

I'_1	I'_2	V'_5
-5.83mA	2.17mA	4.12
I''_1	I''_2	V''_5
1.7mA	1.1 mA	6.7
I_1	I_2	V_5
3.87	3.27	10.82



3) Calculate the absorbed power at R_5? $P = \frac{V^2}{R} = \frac{10.82^2}{2.2k} = 0.05$

4) Measure the equivalent resistance seen by R_5?

... 6.24 mA

Theoretical Part
EE 213

Question 1 Which of the following statements does not represent ohm's law?

1. current / potential difference = constant
2. potential difference / current = constant
3. potential difference = current x resistance
4. current = resistance x potential difference

Question 2 The unit of resistivity is 2- ohm /m

1. ohm
2. ohm / m
3. ohm-m
4. mho

Question 3 Three resistors 2 Ω, 3 Ω and 4 Ω are connected so that the equivalent resistance is 9 Ω . The resistors are connected 1.

1. all in series
2. all in parallel
3. 2 Ω and 3 Ω in parallel and the combination in series with 4 Ω
4. 2 Ω and 3 Ω in series and the combination in parallel to 4 Ω

Question 4 Kilowatt - hour is the unit of 3.

1. potential difference
2. electric power
3. electrical energy
4. charge

Question 5 When a fuse is rated 8 A, it means 2.

1. it will not work if current is less than 8 A
2. it has a resistance of 8 Ω
3. it will work only if current is 8 A
4. it will melt if current exceeds 8 A

Question 6 The device used for measuring potential difference is known as _____.

1. potentiometer
2. ammeter
3. galvanometer
4. voltmeter

Question 7 The work done in moving a unit positive charge across two points in an electric circuit is a measure of _____.

1. current
2. potential difference
3. resistance
4. power

Question 8 The potential at a point is 20 V. The work done to bring a charge of 0.5 C from infinity to this point will be _____.

1. 20 J
2. 10 J
3. 5 J
4. 40 J

Question 9 Joule / Coulomb is same as _____.

1. watt
2. volt
3. ampere
4. ohm

Question 10 Heat produced in a current carrying wire in 5s is 60 J. The same current is passed through another wire of half the resistance. The heat produced in 5 s will be _____.

1. 60 J
2. 30 J
3. 15 J
4. 120 J

Question 11 The current in a wire 3.

1. depends only on the potential difference applied
2. depends only on the resistance of the wire
3. depends on both resistance and potential difference
4. does not depend on resistance and potential difference

Question 12 Two electric bulbs have resistances in the ratio 1:2. If they are joined in series, the energy consumed in them are in the ratio _____.

1. 1:2
2. 2:1
3. 4:1
4. 1:1

Question 13 When a current 'I' flows through a resistance 'R' for time 't' the electrical energy spent is given by _____.

1. $I R t$
2. $I^2 R t$
3. $I R^2 t$
4. $I^2 R / t$