Class Test 1

ICE 1205: Circuit Theory and Analysis

Time: 30 minutes **Marks: 10**

Q.1 Define power and energy. What is the output in horsepower of a motor with an efficiency of 80% and an input current of 8 A at 120 V? 4

Q.2 For the series circuit in Fig.1 6

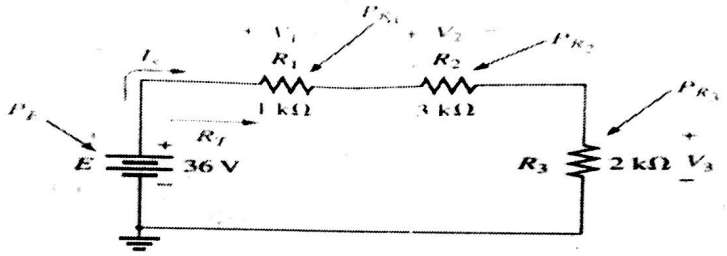


Fig.1

a. Determine the total resistance R_T.
b. Calculate the current I_S.
c. Determine the voltage across each resistor.
d. Find the power supplied by the battery.
e. Determine the power dissipated by each resistor.
f. Comment on whether the total power supplied equals the total power dissipated.

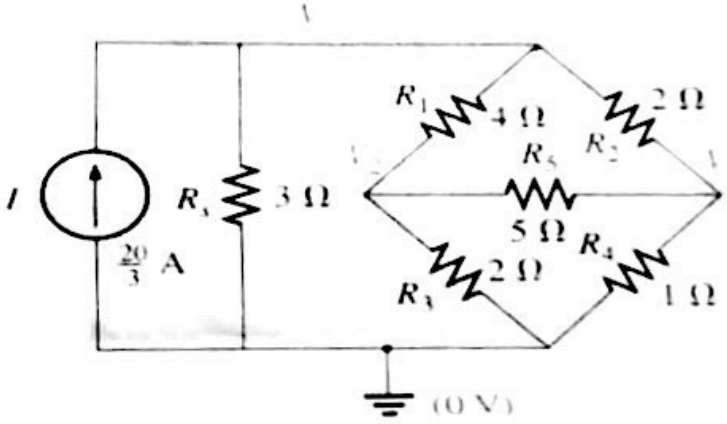
Class Test 2

ICE 1205: Circuit Theory and Analysis

Time: 30 minutes **Marks: 10**

Q.1 Write down the steps of Nodal Analysis procedure. 4

Q.2 Apply Nodal Analysis to determine current through each elements of the following figure. 6



Class Test 3

ICE 1205: Circuit Theory and Analysis

Time: 30 minutes **Marks: 10**

Q.1 Define waveform. Show that the dc value of a sinusoidal current or voltage is $1/\sqrt{2}$ or 0.707 of its peak value. 5

Q.2 a. Determine the angle at which the magnitude of the sinusoidal function $v = 10\sin 377t$ is 4 V. 5

b. Determine the time at which the magnitude is attained