



ELIZADE UNIVERSITY
ILARA-MOKIN
ONDO STATE

FACULTY: Basic and Applied Sciences
DEPARTMENT: Physical and Chemical Sciences
SECOND SEMESTER EXAMINATIONS
2015/2016 ACADEMIC SESSION

COURSE CODE: PHY 202

COURSE TITLE: Electric Circuit Theory I

DURATION: 2 hours

M. S. O. O.

HOD's SIGNATURE

TOTAL MARKS: 60

Matriculation Number: _____

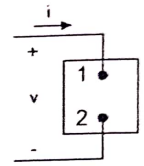
INSTRUCTIONS:

1. Write your matriculation number in the space provided above and also on the cover page of the exam booklet.
2. This question paper consists of 1 page with printing on both sides.
3. Answer all questions in the exam booklet provided.
4. More marks are awarded for problem solving method used to solving problems than for the final numerical answer.
5. Box your final answers. Marks will be deducted for untidy work.
6. At the end of this examination, place the question paper inside the exam booklet.
7. Attempt any (4) of the five (5) questions

PHY 202 Final Exam

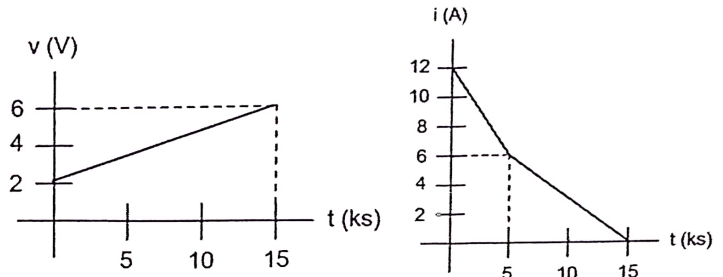
Answer four (4) of the five (5) questions. Each question is worth fifteen (15) points

1. The current and voltage at the terminals of the circuit element in the figure are zero for $t < 0$. For $t \geq 0$ they are, $v = 20e^{-400t} - 20e^{-1600t}$ V and $i = 30 - 40e^{-400t} + 10e^{-1600t}$ mA.

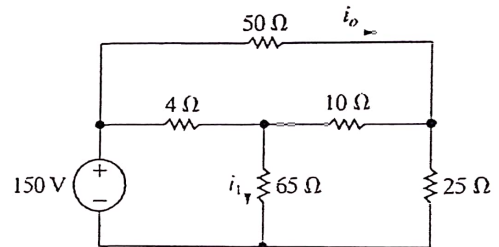


- a. Calculate the total charge (in μC) entering the element at its upper terminal.
- b. Calculate the total energy (in mJ) delivered to the circuit element.

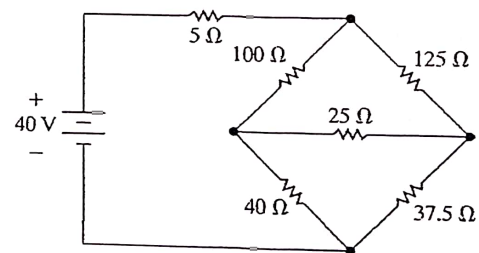
2. The voltage and current at the terminals of an automobile battery during a charge cycle are shown in the figure. Calculate the total energy transferred to the battery.



3. Use Ohm's law and Kirchhoff's laws to find the power delivered by the 150 V source.



4. Calculate the power dissipated in the 40 Ω resistor.



5. Calculate the power dissipated by the 140 Ω resistor.

