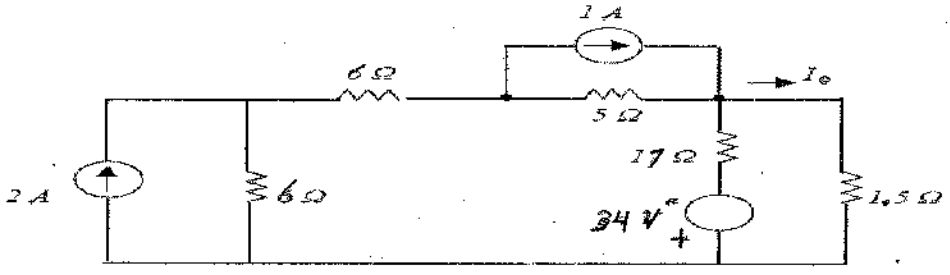
Kafrelsheikh University
Faculty of Engineering
Department: Mechanical Engineering
Year : 1st year(2007) 2020-2021
Subject: Electrical & electronic Engineering

Date: 7-3-2021
Time Allowed: 3:00 hr.
Full Mark: 45 Marks
Final Exam: 2 pages
Academic Code: EPM 1132

1- All the questions according to ILOs: a1, a3, a4, a8 ,a14, a17, b.15; c19.
2- Number of pages : 2 No. of questions : 4
3- The weight of each problem is indicated.
4- This a closed book exam.
5- Clear, systematic answers and solutions are required in general, marks will not be assigned for answers and solutions that require unreasonable (in the opinion of the instructor) effort to decipher.
6- Ask for clarification if any question statement is not clear to you.
7- Attempts in all questions.
8- The exam will be marked out of 45.

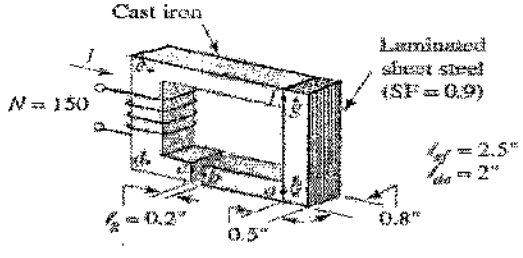
Q1 **10**

Using series of source transformation to find I_o



Q2 **15**

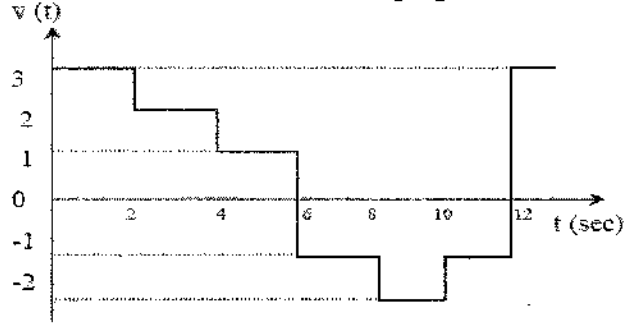
The laminated sheet steel section in the figure has a stacking factor 0.9. Compute the current required to establish a flux ϕ =1.4 x 10^{-4} Wb. Neglect fringing.(Take 1"=2.54 cm)



Cross section = 0.5" × 0.8" (all members)
$\Phi = 1.4 \times 10^{-4}$ Wb

Q3 **10**

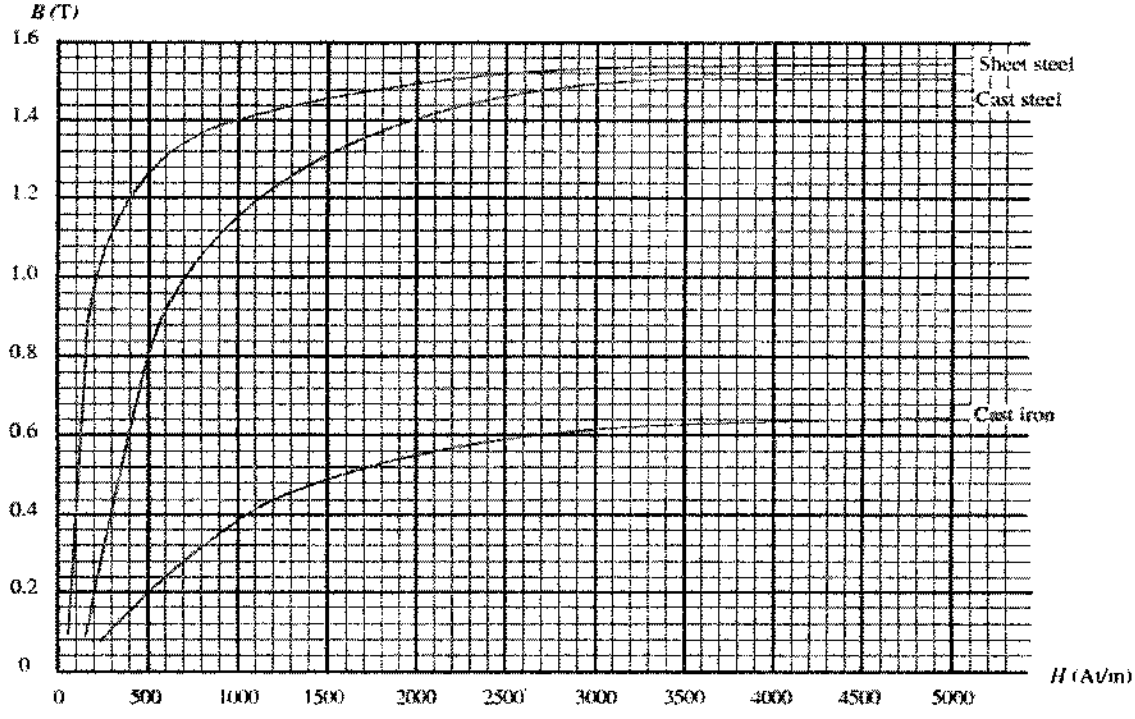
Find the effective value of the waveform shown in the following figure.



Q4 **10**

A series connected load draws a current $i(t) = 4\cos(100\pi t - 10)\,A$, when the applied voltage is $v(t) = 120\cos(100\pi t + 10)\,V$. Find :

1. The apparent power (S)
2. Power factor (leading or lagging)
3. Active power (P)
4. Reactive power (Q)
5. The impedance elements(Z)



End of Exam Questions (Electric Part)

Good Luck

Dr. Fathalla selim and committee