

ELEKTROTEHNIČKI FAKULTET U BEOGRADU
KATEDRA ZA ELEKTRONIKU

ENERGETSKA ELEKTRONIKA
LABORATORIJSKE VEŽBE

VEŽBA BROJ 1:
BOOST KONVERTOR

IME I PREZIME	BR. INDEKSA	GRUPA	OCENA
1.			
2.			

DATUM _____

VREME _____

DEŽURNI U LABORATORIJU _____

D.1.**Tabela 1.1.**

$f_s = 20 \text{ kHz}, D = 0,2$				
$I_{OUT} \text{ [mA]}$	$V_{OUT} \text{ [V]}$	$I_{IN} \text{ [mA]}$	$V_{IN} \text{ [V]}$	$\eta \text{ [%]}$

 $I_{OUT \text{ CCM / DCM}} = \underline{\hspace{2cm}}$
 $V_{OUT \text{ CCM / DCM}} = \underline{\hspace{2cm}}$
D.2.**Tabela 1.2.**

$f_s = 20 \text{ kHz}, D = 0,5$				
$I_{OUT} \text{ [mA]}$	$V_{OUT} \text{ [V]}$	$I_{IN} \text{ [mA]}$	$V_{IN} \text{ [V]}$	$\eta \text{ [%]}$

 $I_{OUT \text{ CCM / DCM}} = \underline{\hspace{2cm}}$
 $V_{OUT \text{ CCM / DCM}} = \underline{\hspace{2cm}}$
D.3.**Tabela 1.3.**

$D = 0,5, R = 100 \Omega$							
$f_s \text{ [kHz]}$	$I_{OUT} \text{ [mA]}$	$V_{OUT} \text{ [V]}$	$I_{IN} \text{ [mA]}$	$V_{IN} \text{ [V]}$	$\eta \text{ [%]}$	$\Delta i_{L \text{ } p-p} \text{ [mA]}$	<i>mode</i> (CCM/DCM)
20							
30							
40							
50							
60							
70							
80							
90							
100							

D.4**Tabela 1.4.**

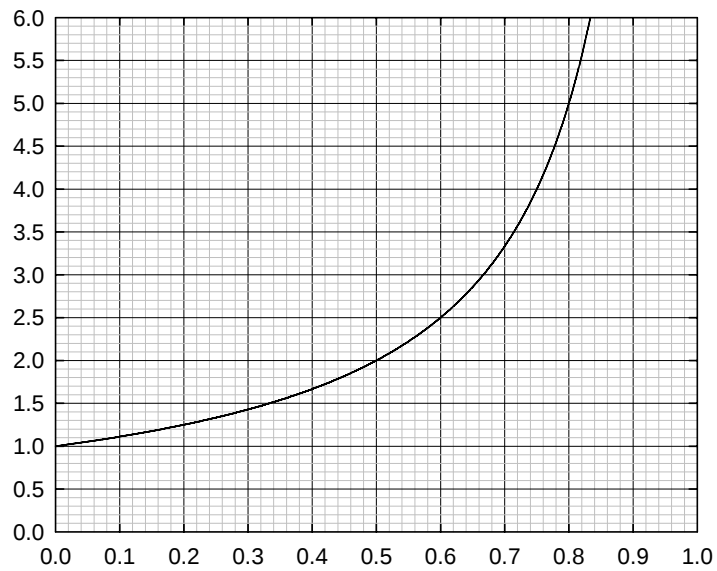
$f_s = 40 \text{ kHz}, D = 0,5$				
$I_{OUT} \text{ [mA]}$	$V_{OUT} \text{ [V]}$	$I_{IN} \text{ [mA]}$	$V_{IN} \text{ [V]}$	$\eta \text{ [%]}$

 $I_{OUT \text{ CCM / DCM}} = \underline{\hspace{2cm}}$
 $V_{OUT \text{ CCM / DCM}} = \underline{\hspace{2cm}}$
D.5.**Tabela 1.5.**

$f_s = 100 \text{ kHz}, D = 0,5$				
$I_{OUT} \text{ [mA]}$	$V_{OUT} \text{ [V]}$	$I_{IN} \text{ [mA]}$	$V_{IN} \text{ [V]}$	$\eta \text{ [%]}$

 $I_{OUT \text{ CCM / DCM}} = \underline{\hspace{2cm}}$
 $V_{OUT \text{ CCM / DCM}} = \underline{\hspace{2cm}}$
D.6.**Tabela 1.6.**

$f_s = 100 \text{ kHz}, R = 100 \Omega$				
D	$V_{OUT} \text{ [V]}$	$V_{IN} \text{ [V]}$	$M = V_{OUT} / V_{IN}$	$mode$ (CCM/DCM)
0,2				
0,3				
0,4				
0,5				
0,6				
0,7				
0,8				



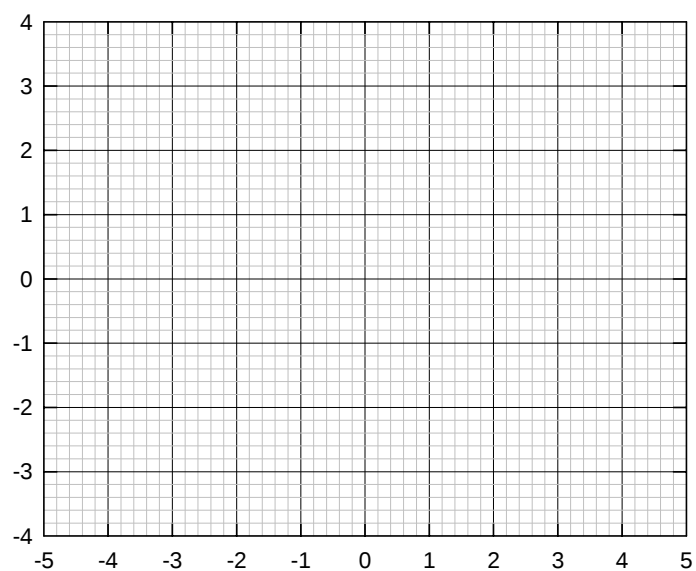
Slika 1.2. Teorijska i eksperimentalna zavisnost $M(D)$; $M = V_{OUT}/V_{IN}$

D.7.

Tabela 1.7.

$f_s = 100 \text{ kHz}$						
$I_{OUT} \text{ [mA]}$	D	$V_{OUT} \text{ [V]}$	$I_{IN} \text{ [mA]}$	$V_{IN} \text{ [V]}$	$\eta \text{ [%]}$	$mode$ (CCM/DCM)

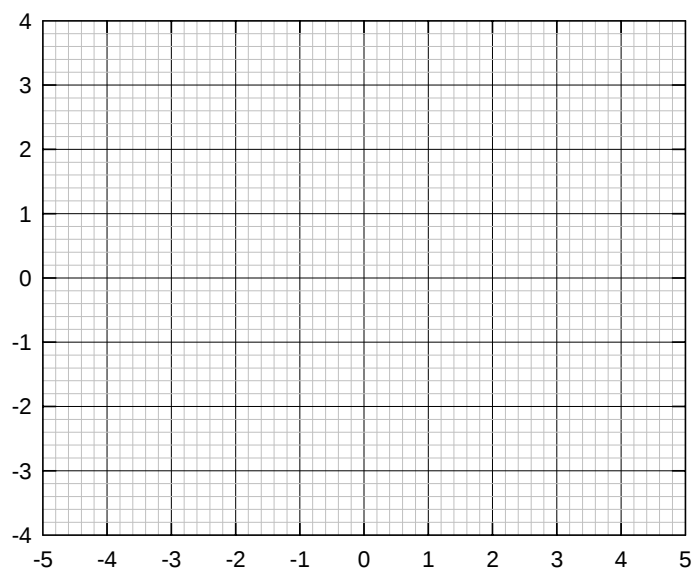
D.8.



Slika 1.3. v_c , CCM

podela naponske ose _____

podela vremenske ose _____



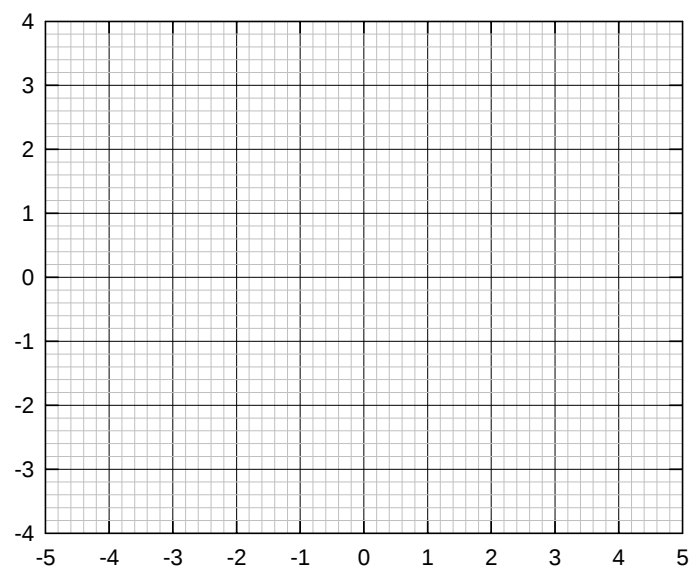
Slika 1.4. i_L , CCM

podela strujne ose _____

podela vremenske ose _____

$esr =$ _____

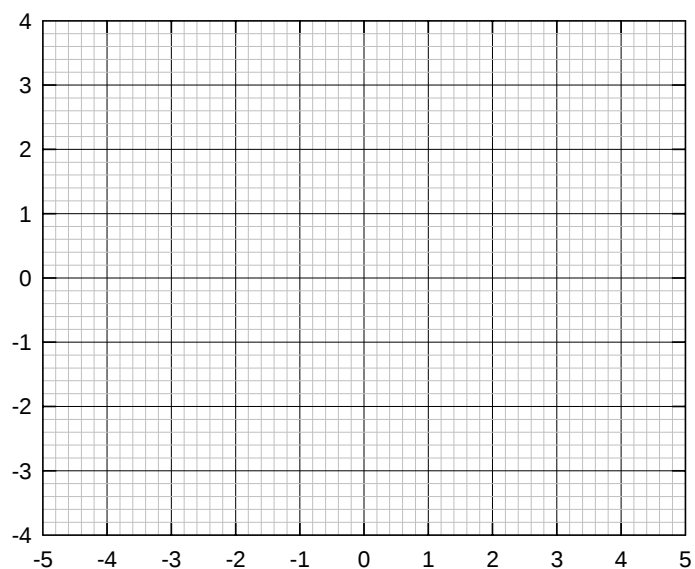
D.9.



Slika 1.5. v_C , DCM

podela naponske ose _____

podela vremenske ose _____



Slika 1.6. i_L , DCM

podela strujne ose _____

podela vremenske ose _____

$I_{OUT} =$ _____ , $C =$ _____

D.10.

Tabela 1.8.

$I_{OUT} = 300 \text{ mA}$					
$I_0 \text{ [mA]}$	$v_s(I_0) \text{ [mV]}$	$R \text{ [}\Omega\text{]}$	$I_1 \text{ [mA]}$	$v_s(I_1) \text{ [mV]}$	$R \text{ [}\Omega\text{]}$
$I_{OUT} = 500 \text{ mA}$					
$I_0 \text{ [mA]}$	$v_s(I_0) \text{ [mV]}$	$R \text{ [}\Omega\text{]}$	$I_1 \text{ [mA]}$	$v_s(I_1) \text{ [mV]}$	$R \text{ [}\Omega\text{]}$

$\bar{R} =$ _____