University	: Menoufia		Date	: 24/06/2019
Faculty	: Electronic Engineering		Time	: 3 Hours
Department	: Electronics & Electrical Communications		No. of pages :	2
Academic level	: 2nd Year		Full Mark	: 45 Marks
Course Name	: Electronic circuits		Exam	: Final Exam
Course Code	: ECE 223		Examiner	: Dr: A. I. Bahnacy

(برجاء إجابة الجزء الاول من الناحية اليمنى والجزء الثاني من الناحية اليسرى في كراسة الإجابة)

PART 1

Answer all the following questions :

Question No 1 :   (15 Marks)

1-a-What is meant by cross over distortion in class B push-pull amplifier?.
   Describe one method to overcome this distortion .
   Clarify your answer with drawing.   (7-Marks)

1-b- Find the maximum ac output power, the dc input power and the maximum efficiency of the
   amplifier shown in Fig. 1. Also determine the input resistance assuming $\beta_{ac}=50$ and $r'_e=6\Omega$.
   If the circuit shown in Fig. 1 is replaced by a Darlington class AB push-pull amplifier with $\beta_{ac}=50$
   for each transistor, what will be the input resistance?,
   and , what is the advantage of that? .   (8-Marks)
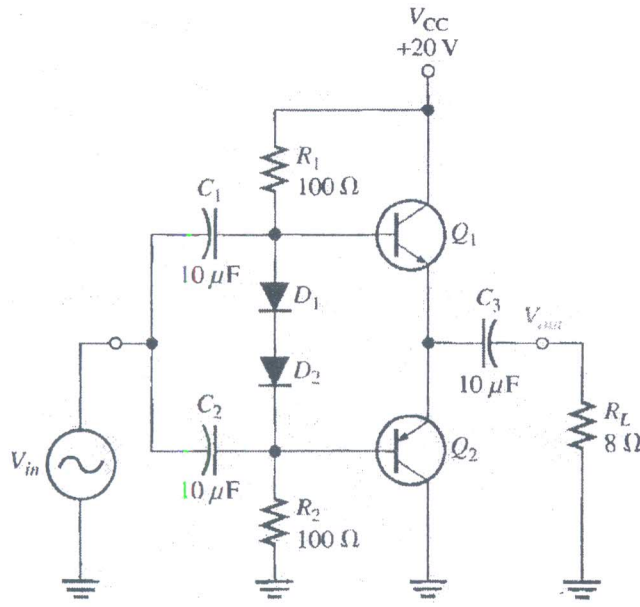

Fig. 1

من فضلك اقلب الورقة

Question No 2:   (15 Marks)

2-a- What is meant by class C amplifier?.

Why application of this amplifier is limited to tuned circuit applications?.   (3- Marks)

2-b- A certain class C amplifier transistor is ON for 20% of the input cycle. If $V_{ce(sat)}$=0.2V and $I_{c(sat)}$= 25mA, what is the average power dissipation for maximum output?. Determine the efficiency if V_{CC}=15V and the equivalent parallel resistance in the collector tank circuit is 50Ω.   (6-Marks)

2-c- Define: Amplifier frequency response - Dominant critical frequencies -

Band width.   (6-Marks)

Question No 3 :   (15 Marks)

For the BJT amplifier in Fig. 2 determine:

i- The low critical frequencies of the input, output and bypass RC circuits.   (6 Marks)

ii- The high critical frequencies of the input and output RC circuits.   (4 Marks)

iii- Draw the Bode plot of the total frequency response and determine the bandwidth.
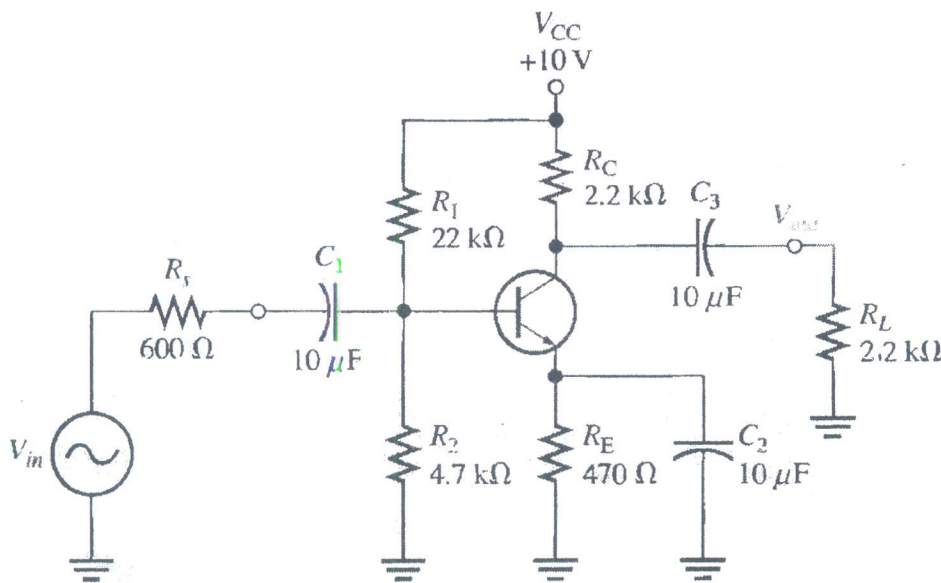
Consider β_{ac}=125, r'_e=12Ω, C_{be}=20pF, and C_{bc}=2.4pF.   (5 Marks)

Fig.2

مع أطيب الامنيات بالنجاح والتفوق