

ECEN321: Analogue Electronics

Assignment 1: Power Amplifiers - Submission

Daniel Eisen : 300447549

April 16, 2020

Question 1

- I. *An audio amplifier operates in the frequency range of..*
 - a. **20Hz to 20kHz**
- II. *For maximum peak-to-peak output voltage, the Q point should be..*
 - c. **At the centre of the dc load line**
- III. *An amplifier has two load lines because..*
 - d. **All of the above**
- IV. *Push-pull is almost always used with..*
 - b. **Class B**
- V. *Class C amplifiers are almost always..*
 - c. **Tuned RF amplifiers**
- VI. *The input signal of a class C amplifier..*
 - c. **Produces brief pulses of collector current**
- VII. *If $RC=100\ \Omega$ and $RL=180\Omega$, the ac load resistance equals..*

The answer
- VIII. *In a class A amplifier, the collector current flows for..*
 - d. **The entire cycle**
- IX. *With class A, the output signal should be..*
 - a. **Unclassified**
- X. *A small quiescent current is necessary with a class AB push-pull amplifier to avoid..*
 - a. **Crossover distortion**

Question 2

- a) In the push push-pull configuration, the base-emitter junctions of the transistors have a potential of 0.7V. Thus when the input drops below this, at the **crossover** around the zero-point, the output is cut-off. This introduces a flatline distortion between positive and negative half cycles.
- b)

Question 3

Question 4

i)

ii)

iii)

Question 5

Question 6