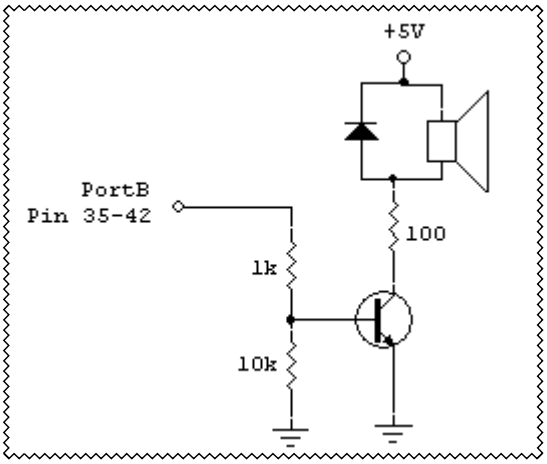
ET 386L
Lab 10 Sound, Driving Loads

1. Connect the following circuit:



2. Create, assemble, make appropriate comments and save the following program:

```
         ORG    $0100       ;
PITCH    LDAA   #$FF        ;
         STAA   $1004       ;
         LDX    #$A7        ;

HIGH     DEX                ;
         BNE    HIGH        ;
         LDAA   #$00        ;
         STAA   $1004       ;
         LDX    #$A7        ;
LOW      DEX                ;
         BNE    LOW         ;
         JMP    PITCH       ;
         END
```

3. Modify the program so that a pitch of 440 Hz. is produced.

4. Create, assemble, make appropriate comments and save the following program:

```
*Load pitches*
        ORG     $0130
        FDB     $02F4,$0278,$021B,$0180
*Main body*
        ORG     $0100
        LDX     #$0130  ;initialize index x to point to pitches
SING    LDY       $00,X   ;index y to hold pitches, determined by index x
        CPY     #$FFFF  ;test for end of pitches mask
        BEQ     CODA    ;test for end of pitches
        JSR      TUNE    ;subroutine to actual sound
        INX
        INX
        JMP     SING
*Subroutine for sound*
        ORG     $0150
TUNE    LDAB    #$FF    ;duration of pitch
TUNE1   LDAA    #$FF
        LDY     $00,X
        STAA    $1004
HIGH    DEY
        BNE      HIGH
        LDAA    #$00
        STAA    $1004
        LDY     $00,X
LOW     DEY
        BNE     LOW
        DECB
        BNE     TUNE1
        RTS
*End of tune*
CODA    NOP
        END
```

5. Modify the preceding program by causing the “arpeggio” to go up and then down. Also, make the pitches move twice as fast.

6. New Commands

FDB	Form Double Byte
CPY	Compare Index Register Y