

Instructions: Mark your answers on the answer sheet.
Turn in only the answer sheet.

CORRECT =+1 BLANK=0 INCORRECT-2

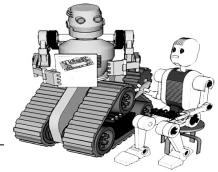
True and False

1. Each program can have only one **main()**.
2. When you clap your hands other people hear it because the air near your hand travels to the listeners ear.
3. **main()** is the first user function executed.
4. **#define X 123** creates the variable X.
5. Functions are uniquely identified by their signature.
6. A function parameter list is the data declarations for the data passed into a function.
7. A **#include** using <> will look for the included file in your project directory.
8. **void** is a data type.

Best Choice Matching - Regarding the MPLAB IDE

9. View output from processor pins
10. View variables with a global scope
11. View output from compiler and other tools.
12. View machine code generated by compiler.
13. View variables defined in current procedure.

- A) Watch Window
- B) Output Window
- C) Logic Analyzer Window
- D) Disassembly Listing Window
- E) Locals Window



Best Answer Multiple Choice

On any question you may answer E for none of the above.

14. The **void** prior to **main()**

- A) is the return type.
- B) indicates the procedure is main.
- C) is used only when the procedure is named main.

void main(void)

15. The **void** following **main** is in “()” because

- A) it is the function signature.
- B) it is in the parameter list.
- C) it is void.

16. The function signature consists of the

- A) return type and function name
- B) function name
- C) return type, function name, and parameter list (CORRECT ANSWER)**
- D) function name and parameter list (NOT THIS)

17. Which of the following operators will take the 1's compliment of a number.

- A) % B) - C) ! D) ~

18. The waves created by a speaker in air are known as.

- A) delta waves C) thermal waves
- B) compression waves D) plasma bursts

19. Which of the following did we use to determine the duration of a sound?

- A) duration = cycles * period
- B) duration = cycles * halfPeriod
- C) duration = cycles * frequency
- D) duration = cycles * halfFrequency

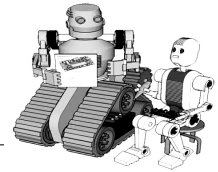
20. To decrease the duration of a tone without changing the pitch.

- A) Increase the delay between switching the port bit from on to off
- B) Decrease the delay between switching the port bit from on to off
- C) Increase the number of cycles
- D) Increase the halfPeriod

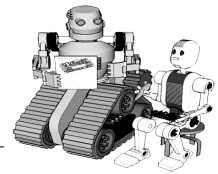
Quiz 12/02/2008

BCHS Advanced Computer Programming
Introduction to Robotics
4th Period 2008-2009

NAME _____
SCORE _____



21. To increase the frequency of a tone
A) Decrease the period C) Increase the number of cycles
B) Increase the period D) Decrease the number of cycles
22. The delay between turning the port on and off is.
A) The period C) One half the period
B) The frequency D) One half the frequency
23. Give that cycles range from -10 to 150 which is the smallest data type that will work.
A) unsigned B) char C) int D) long
24. The character # tells the compiler.
A) This is the start of a message to be passed to the compiler
B) This is the start of chip configuration
C) Include the following file
25. #pragma config
A) Tells the compiler how to configure data
B) Tells the compiler what chip is used
C) Tells the compiler how to configure the chip
26. What file type **18F1320.i** is
A) Header file B) Include file C) linker command file
27. The code that executes prior to any code we write sets up the data needed by our program. The name of that code is.
A) C018 B) Init C) Preamble
28. With 3 signals/pins you can charlieplex.
A) 2 LEDs C) 6 LEDs
B) 4 LEDs D) 8 LEDs
29. A variable of type int has
A) 8 bits C) 4 bits
B) 16 bits
30. #define is used to do
A) variable declaration
B) text substitution
C) complex variables



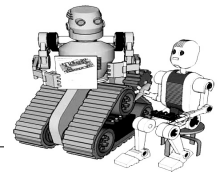
```
// Make a sound then rest for an equal period, repeat
// Speaker is connected to RA1
...
#define MAX_CYCLES 1000
#define HALF_PERIOD 30

1 myDelay(unsigned char delay)
2 {
3   for(d=delay; d>0; d++)
4   {
5     Nop; Nop();
6   }
7 }

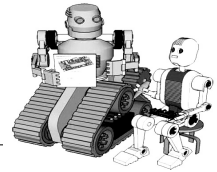
...

8 {
9   char cycles;
10  TRISA = 0xFF;
11  for(cycles=0; cycles>MAX_CYCLES; cycles++)
12  {
13    LATA=0x01; // on
14    myDelay(HALF_PERIOD);
15    LATA=0x00; // odd
16
17  }
18 }
```

The code in the above box has many flaws. In each of the remaining questions you will be asked to make a choice. Some questions pertain to simple syntax while others require you to understand how we make sounds using the micro controller.



31. Error in line 1.
- A) Syntax error in parameter list
 - B) Missing parameter list
 - C) Missing return type
 - D) Illegal function name
32. Line 3 should be
- A) `for(d=delay; d<0; d++)`
 - B) `for(d=delay; d>0; d--)`
 - C) `for(d=delay; d>1; d++)`
 - D) `for(d=delay; d<1; d--)`
33. The correct version of line 5 is
- A) `Nop; Nop();`
 - B) `Nop; Nop;`
 - C) `Nop() Nop();`
 - D) `Nop(); Nop();`
34. If line 5 only had one Nop it would cut the delay generated for a given delay by 1/2.
- A) True
 - B) False
 - C) It depends on the value of delay
35. Line 7
- A) is correct
 - B) the } is unneeded
 - C) we can not tell
36. Which version of line 9 would be the best choice
- A) `char cycles;`
 - B) `unsigned char cycles;`
 - C) `int cycles;`
 - D) `unsigned int cycles;`
37. The correct version of line 10 is
- A) `TRISA = 0xFB;`
 - B) `TRISA = 0xFD;`
 - C) `TRISA = 0xFE;`
 - D) `TRISA = 0xFF;`



38. The correct version of line 11 is
- A) `for(cycles=0; cycles>MAX_CYCLES; cycles++)`
 - B) `for(cycles=0; cycles>MAX_CYCLES; cycles--)`
 - C) `for(cycles=0; cycles<MAX_CYCLES; cycles++)`
 - D) `for(cycles=0; cycles<MAX_CYCLES; cycles--)`
39. The correct version of line 13 is
- A) `LATA=0x00;`
 - B) `LATA=0x01;`
 - C) `LATA=0x02;`
 - D) `LATA=0x04;`
40. The correct version of line 14 is
- A) `myDelay(HALF_PERIOD);`
 - B) `myDelay(HALF_PERIOD*2);`
 - C) `myDelay(HALF_PERIOD/2);`
41. The correct version of line 15 is
- A) `LATA=0x00;`
 - B) `LATA=0x01;`
 - C) `LATA=0x02;`
 - D) A or B but not C
42. The correct version on line 16 is
- A) blank, just as it is in the code
 - B) `myDelay(HALF_PERIOD);`
 - C) `TRISA = 0x00;`
 - D) `myDelay(HALF_PERIOD*2);`