

ECE160 Exam#1

Sample Questions and Required Answer Format

Exam #1: Specific Formats (1)

- Problem#1: true/false statements
- Examples:
 - 1) F C considers the variables studentid and StudentId to be identical
 - 2) T All variables must be defined before they are used and all variables must be given a type when they are defined in C
 - 3) F The logical expression a || b is true only when both operands a, b are true
 - 4) T The statement printf("HELLO\a\a"); will display HELLO and generate two beeps

Answer format



Exam #1: Specific Formats (2)

- Problem#2: number conversions
- Examples (HW#1):
 - 1) Convert 423_{10} to octal.
 - 2) Convert 10100100111_2 to hexadecimal.
 - 3) Convert $CAFE_{16}$ to decimal.

Answer format:

Problem#2:

3) $(CAFE)_{16}$

$$= C*16^3 + A*16^2 + F*16^1 + E*16^0$$

$$= 12*16^3 + 10*16^2 + 15*16^1 + 14*16^0$$

$$= (51966)_{10}$$

Exam #1: Specific Formats (3)

- **Problem#3:** given a program with a set of printf statements containing C expressions, write down the output and show the relevant work.
- **Example (L#8)** →

Answer format:

Problem#3:

.....

5) $3\%7+3=3+3=6$

6) $3\%6.0$ compilation error as % cannot be applied to float operand

```
#include <stdio.h>
void main(void)
{
    int a=3;
    int b=7;
    float c=6.0;
    1) printf("%d\n", a/b);
    2) printf("%f\n", a/c);
    3) printf("%d\n", b/a);
    4) printf("%d\n", c/a);
    5) printf("%d\n", a%b+a);
    6) printf("%f\n", a%c);
    7) printf("%d\n", b%a);
    b=a++;
    8) printf("%d\n", b);
    9) printf("%d\n", a);
    10) printf("%d\n", a--);
}
```

Exam #1: Specific Formats (4)

- **Problem#4**: given a program with a set of errors, identify all the errors
- **Example** →

Answer format:

Problem#4:

Line 2: ; should be removed

Line 4: INT should be int

Line 5: ; is missing after 7

Line 7: closing " is missing after \n

Line 9: & should be removed before b

Line 10: %f should be removed

```
1. #include <stdio.h>
2. void main(void);
3. {
4.     INT a=3;
5.     int b=7
6.     printf("%d\n", a/b);
7.     printf("%d\n, b%a);
8.     b=a++;
9.     printf("%d\n", &b);
10.    printf("%d%f\n", a);
11. }
```

Exam #1: Specific Formats (5)

- Problem#5: given requirements, write a complete C program
- Example (Lab#3 Problem 6): write a program where you ask the user to enter 3 integer numbers and you print them out one per line in the order the numbers were entered

Answer format:
Problem#5:

```
#include <stdio.h>
void main(void)
{
    int a=0;
    int b=0;
    int c=0;
    printf("Please input 3 integer numbers:\n");
    scanf("%d %d %d", &a, &b, &c);
    printf("\n%d \n%d\n %d\n", a, b, c);
}
```