

Week 2 Participation

Q1. Base Conversions

Consider the binary value 1001 1001...

Q1.1. What is its value in decimal?

- A. 99
- B. 173
- C. 153
- D. None of the above

Q1.2. What is its value in hexadecimal?

- A. 0xF1
- B. 0x99
- C. 0x24
- D. Non of the above

Q1.3. What is its value on octal?

- A. 0331
- B. 0231
- C. 0701
- D. None of the above

Q2. Bit operations

if x and y have the following values in binary:

x = 1011

y = 0110

Q2.1. What is the binary result of `x & y`?

- A. 0010
- B. 1111
- C. 1101
- D. None of the above

Q2.2. What is the binary result of `x | y`?

- A. 0010
- B. 1111
- C. 1101
- D. None of the above

Q2.3. What is the binary result of `~x`?

- A. 1011
- B. 1001
- C. 0100
- D. None of the above

Q2.4. What is the binary result of `x << 2`?

- A. 1011
- B. 0000
- C. 1100
- D. None of the above

Q3. Bitwise Calculations

How would you write the expression for calculating y using only bitwise operators in C?

```
C
int x = /* any value */
int y = (x % 4) * 8
```

Q4. Understanding C

What is the output of this C program:

```
C
#include <stdio.h>

int main() {
    char* s[3] = { "apple",
                  "banana",
                  "coconut" };
    char** ss = s;
    printf("%s (%c...), %s, %s\n",
          ss[0], ss[0][0], ss[1], s[2]);
    return 0;
}
```

Q5. Understanding ISAs

What are the two main categories of Instruction Set Architectures, and describe their differences in 1-2 sentences.