Exam-1.2

Started: Jun 13 at 9:01pm

Quiz Instructions

Question 1	3 pts

What is the problem with the following code?

```
int i  = 5

char ptr = &i;

char *ptr1 =  &i;

printf("%d\n", i);
```

p   0 words   </>   ↗   ⋮

Question 2	3 pts

What is the potential address space of a system which uses 32-bit word size?

p

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Question 3   **3 pts**

What are the sizes of arr and p in the C program in the 32-bit machine?

int arr[50];

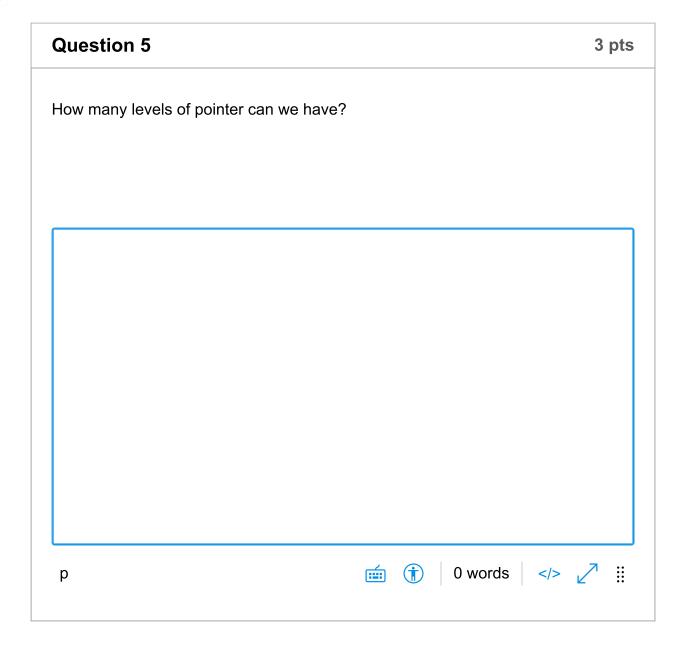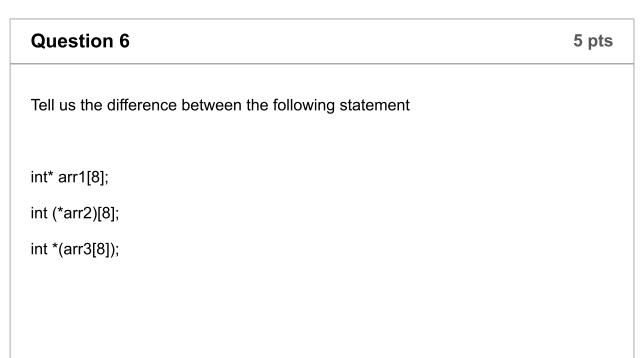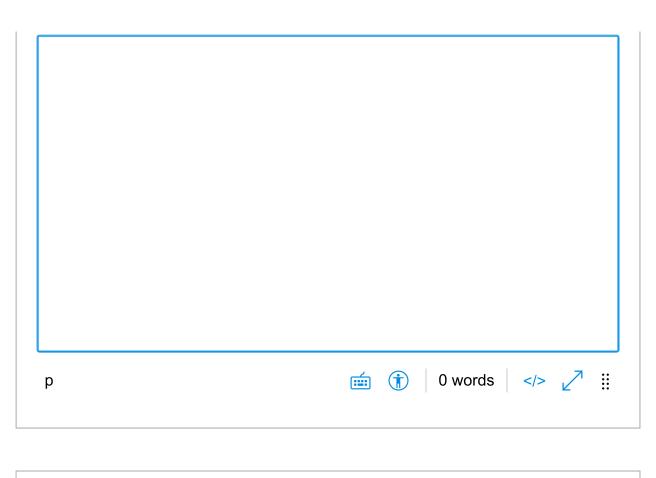int *p = arr;

p

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Question 4

3 pts

What is the size of the following union *abc*?

1. **union** abc{
2.   **int** a;
3.   **char** b;
4.   **float** c;
5.   **double** d;
6. };

p

0 words </>

Question 5   3 pts

How many levels of pointer can we have?

p   0 words   </>

Question 6   5 pts

Tell us the difference between the following statement

int* arr1[8];

int (*arr2)[8];

int *(arr3[8]);

p

0 words

Question 7   5 pts

What is piping in the bash shell? Write a shell command using pipe(s).

p

0 words

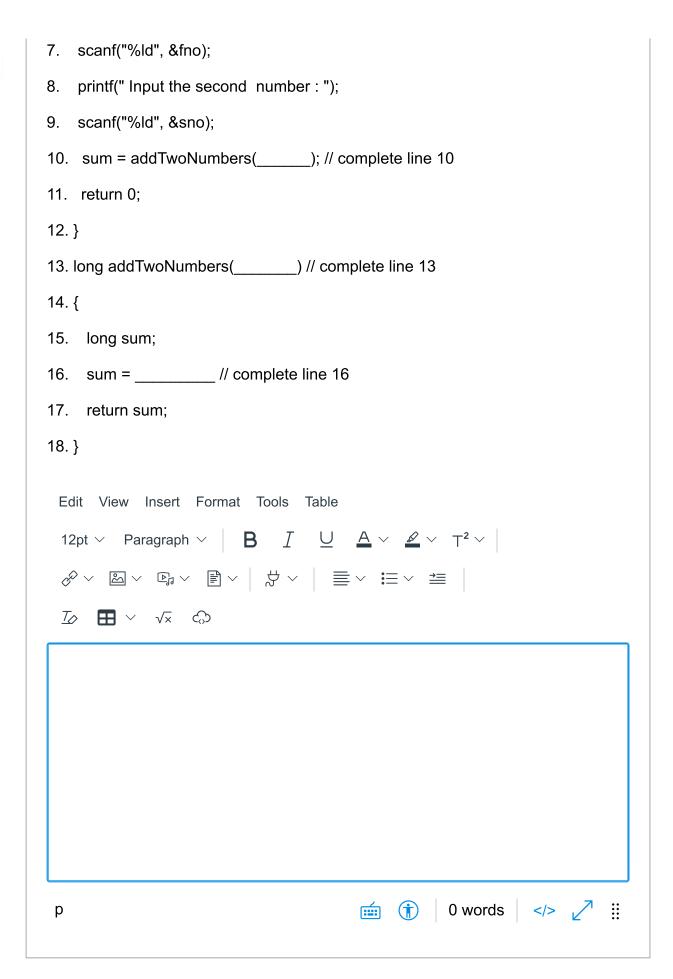## Question 8   5 pts

Why does the CPU need to be in privileged mode while OS is doing any task? Explain.

p   0 words

Question 9   4 pts

Based on the code snippet, finish the function prototype for the *foo* function, clearly showing the type of each argument.

void foo( );

….

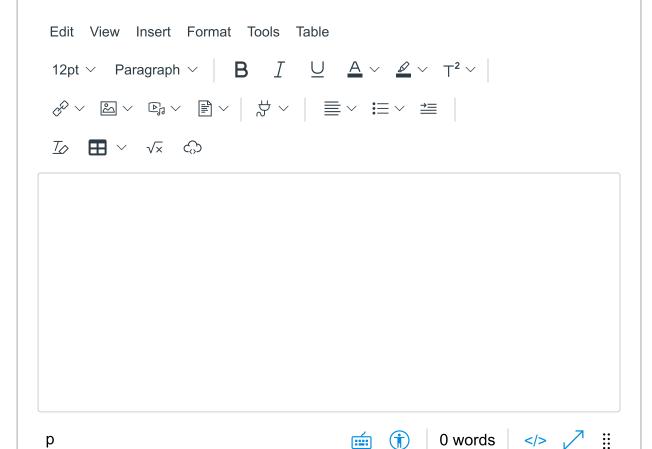int main() {

  int *a, c[10]={[0,2]=10};

```
    char  b;

   a = c;

   foo((float *)&a[0], b, c);

}
```

Edit   View   Insert   Format   Tools   Table

12pt ⌄   Paragraph ⌄ | **B**   *I*   U̲   A ⌄   ✎ ⌄   T² ⌄ |

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Question 10   8 pts

Complete line number 2, 10, 13, and 16

1. #include <stdio.h>

2. long addTwoNumbers(_____); // Complete line 2

3. int main()

4. {

5.   long fno, sno, sum;

6.   printf(" Input the first number : ");
```

7.   scanf("%ld", &fno);

8.   printf(" Input the second  number : ");

9.   scanf("%ld", &sno);

10.   sum = addTwoNumbers(_____); // complete line 10

11.   return 0;

12. }

13. long addTwoNumbers(_____) // complete line 13

14. {

15.   long sum;

16.   sum = _____ // complete line 16

17.   return sum;

18. }

Edit   View   Insert   Format   Tools   Table

12pt ∨   Paragraph ∨   **B**   *I*   U   A ∨   ✎ ∨   T² ∨

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## Question 11                                                8 pts

a. [3 points] Write code which creates a struct type called StudentData to represent the registration data of each student in our class. The structure has two fields: the id field *stu_id* that is an 32-bit unsigned integer, and the name field *stu_name* that uses (up to) 20 characters.

b. [2 points] In the above question, let us assume the struct type in addition has the third field variable *stu_sec* to represent the student section id, which is of an enum type with three section names SECTION1 (representing 1), SECTION2 (representing 2) and SECTION3(representing 3) as its member fields. Write the code to correctly declare the enum type variable *stu_sec*.

c. [3 points] Continue with the above question. Write code to (1) declare a variable *bob* and a pointer *p* of this struct type; (2) initialize *p* with the address of *bob;* (3) initialize the section id of *bob* with SECTION3 through the pointer *p*

Edit   View   Insert   Format   Tools   Table

12pt ⌄    Paragraph ⌄    **B**  *I*  U̲  A ⌄  ✎ ⌄  T² ⌄

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