C And CPP Lab

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1. **What is output of following program.**

```
#include <stdio.h>
int main()
  {
        int  *p;
       int var = 10;
       p= &var;
       printf("Value of variable var is: %d", var);
       printf("\nValue of variable var is: %d", *p);
      printf("\nAddress of variable var is: %p", &var);
       printf("\nAddress of variable var is: %p", p);
       printf("\nAddress of pointer p is: %p", &p);
       return 0;
}
```

2. **What is output of following program.**

```
#include <stdio.h>
        int main()
         {
                  int var =10;
                int *p;
                p= &var;

                   printf ( "Address of var is: %p", &var);
                   printf ( "\nAddress of var is: %p", p);

                   printf ( "\nValue of var is: %d", var);
                   printf ( "\nValue of var is: %d", *p);
                   printf ( "\nValue of var is: %d", *( &var));

                /* Note I have used %p for p's value as it represents an address*/
                 printf( "\nValue of pointer p is: %p", p);
                printf ( "\nAddress of pointer p is: %p", &p);
                return 0;
        }
```

3. **Remove Error and Check Output.**

```
        #include <stdio.h>
        int main()
                {
                 int num=123;

                //A normal pointer pr2
                  int *pr2;
```

```
        //This pointer pr2 is a double pointer
        int **pr1;

    /* Assigning the address of variable num to the
     * pointer pr2
     */
    pr2 = #

   /* Assigning the address of pointer pr2 to the
   * pointer-to-pointer pr1
   */
   pr1 = &pr2;

      /* Possible ways to find value of variable num*/
      printf("\n Value of num is: %d", num);
      printf("\n Value of num using pr2 is: %d", *pr2);
      printf("\n Value of num using pr1 is: %d", **pr1);

      /*Possible ways to find address of num*/
      printf("\n Address of num is: %p", &num);
      printf("\n Address of num using pr2 is: %p", pr2);
      printf("\n Address of num using pr1 is: %p", *pr1);

      /*Find value of pointer*/
      printf("\n Value of Pointer pr2 is: %p", pr2);
      printf("\n Value of Pointer pr2 using pr1 is: %p", *pr1);

      /*Ways to find address of pointer*/
      printf("\n Address of Pointer pr2 is:%p",&pr2);
      printf("\n Address of Pointer pr2 using pr1 is:%p",pr1);

      /*Double pointer value and address*/
      printf("\n Value of Pointer pr1 is:%p",pr1);
      printf("\n Address of Pointer pr1 is:%p",&pr1);

      return 0;
   }
```

4. Check and Print output of following Program.

```
#include <stdio.h>
void salaryhike(int  *var, int b)
{
   *var = *var+b;
   b= b+10;
}

int main()
{
```

```
    int salary=0, bonus=0;
    printf("Enter the employee current salary:");
    scanf("%d", &salary);
    printf("Enter bonus:");
    scanf("%d", &bonus);
    salaryhike(&salary, bonus);
    printf("Final salary: %d\n", salary);
    printf("Final Bonus: %d", bonus);
    return 0;
}
```

5. Check and print output of following program.

```
#include<stdio.h>
int main()
{
   int i;
   int a[5] = {1, 2, 3, 4, 5};
   int *p = a;       // same as int*p = &a[0]
   for (i = 0; i < 5; i++)
   {
      printf("%d\n", *p);
      p++;
   }

   return 0;
}
```

6. Check and print output of following program.

```
#include<stdio.h>
int main(){
int number=50;
int *p;//pointer to int
p=&number;//stores the address of number variable
printf("Address of p variable is %u \n",p);
p=p+1;
printf("After increment: Address of p variable is %u \n",p);
 return 0;
}
```