Week - 2

Assignment - 1

Predict the following Output

1.

```
#include <stdio.h>
void fun(int x)
{
    x = 30;
}
int main()
{
   int y = 20;
   fun(y);
   Printf ("%d", y);
   return 0;
}
```

Y

20

Can't able to modify local variable of a function inside another function

So o/p → 20

With the help of pointer we can do or change that

Call by Value

2.

```
#include <stdio.h>
void fun (int *ptr)
{
    *ptr = 30;
}
int main()
{
    int y = 20;
    fun(&y);
    Printf("%d", y);
    return 0;
}
```

output → 30

y

20

1000

*ptr = ~~20~~ 30

Pf - 30

With the help of pointer we can change local variable

Call by reference

3. int main()

{

int *ptr;

int x;

ptr = &x;

*ptr = 0;

Printf("x = %d\n", x); o/p → 0

Printf("*ptr = %d\n", *ptr); o/p → 0

*ptr += 5; *ptr += 5 → 0+5 = 5

Printf("x = %d\n", x); o/p → 5

Printf("*ptr = %d\n", *ptr); o/p → 5

(*ptr)++; *ptr = 5 *ptr++ = 6

Printf("x = %d\n", x); o/p → 6

Printf("*ptr = %d\n", *ptr); o/p → 6

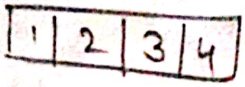
return 0;

}

ptr	x
1000	0
	1000

*ptr = x

4.
```
#include<stdio.h>
int main()
{
    char s1[7]="1234", *p;
    p=s1+2;
    *p='0';
    Printf("%s", s1);
}
```

s1 = 

s1+2 = 3

p → hold an addres
of 3

*p = 3 it change
to 0

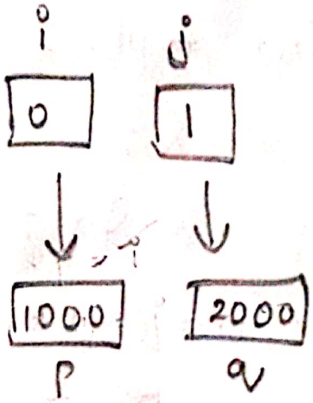
∴ s1 → 1204

O/p 1204

5. #include <stdio.h>

```
void f (int *p, int *q)
{
    p = q;
    *p = 2;
}
int i=0, j=1;
int main()
{
    f(&i, &j);
    Printf("%d%d\n", i, j);
    getchar();
    return 0;
}
```

Call by reference



p = q

∴ p = 2000

*p = 2 → j = 2

o/p 0, 2

6

```
#include <stdio.h>
int f(int x, int *py, int **ppz)
{
    int y, z;
    **ppz += 1;
    z = **ppz;
    *py += 2;
    y = *py;
    x += 3;
    return x+y+z;
}
void main()
{
    int c, *b, **a;
    c = 4
    b = &c;
    a = &b;
    Printf ("%d", f(c,b,a));
    return 0;
}
```

**ppz = a = &b
&(&c)
&(1000)
**ppz = 2000

In 64 bit 2000 + 1 → 2000H

∴ z = 5

*py += 2
b += 2
c = 7
y = *py = 7
x = 4+3 = 7
return 7 + 7 + 5 = 19

Step 1: Main funct

c: 4 — *b = &c — a = &b
*b = c

Lets take

c	b	a
4	1000	2000
1000	2000	

7.
```
#include <stdio.h>
int main()
{
    int arr[] = {1,2,3,4,5};
    int *p = arr;
    ++*p;
    p+=2;
    printf("%d", *p);
    return 0;
}
```

new address = current address + i * size(data type)

1)

arr

1	2	3	4	5

*p = arr p = &arr

p = 1000

*p = 1

++*p = 2

p = p+2 = 1004

*p = 3

o/p → 3

P
1000
1002
1004

8.
```
#include <stdio.h>
int main()
{
    Char C[] = "GATE2011";
    Char *p = C;
    Printf("%s", p + p[3] - p[1]);
}
```

g	A	T	E	2	0	1	1

*p → hold base address

%c

P[3] → E P[A] - A

9.

```
int main()
{
    char arr[] = "Workstreet"
    Printf("%s", ?);
    return 0;
}
```

arr =

W	o	r	K	s	t	r	e	e	T
0	1	2	3	4	5	6	7	8	9

∴ arr+4

It will start pointing from s till '\0'

Scanned by CamScanner

10.

```
#include <stdio.h>
int fun(char *str1)
{
    char *str2 = str1;
    while (*++str1);
    return (str1 - str2);
}
int main()
{
    Char *str = "Workstreet";
    Printf ("%d", fun(str));
    return 0;
}
```

str2 = str1

while (*++str1)

Cound until '\0'

Workstreet

1 2 3 4 5 6 7 8 9 10

10

while return

str1 will increase to 10

Previous Value Subtr Present Value

difference will be 10

return 10

o/p 10

Sir I'm not Sure & little bit
Confused in Prob no 6, 8 & 10