Vinit Chaudhary
2218444

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Tutorial 1:-

Ans1) 18 Bytes

Ans2) No Output

Ans3) 7

Ans4) 0 2

Ans 5) 2011

Ans6) 5

Ans 7) 1

Ans8) 0 , C

Ans9) Choice A
Choice B No Choke
~~No Output~~

Ans10) 2

} logic behind all these outputs is given below

logic

Ans1)
```
struct {
    short s[5];      5x2 = 10 bytes.
    union {
        float y;  ---> 4 bytes
        long z;   ---> 8 bytes.
    } u;
} t;
```

} In Union, the variable with maximum occupancy, will decide the size of union.

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2218444

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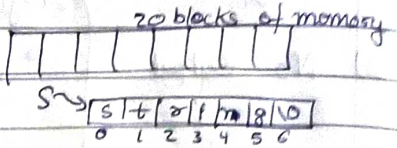
$\therefore$ total = 10 + 8
= 18 bytes.

Ans2.) char P[20];
char *S = "String";
int length = strlen(S); → it will give 6
int i;
for(i=0; i<length; i++) (i<6)
p[i] = s[length - i];
printf("%s", p);



P[0] = S[6-0]
= S[6]
= 10
∵ Compiler sees 0, ∴ loop will break.

try it once
If i=1 was taken in for loop, we would get reverse of string.

Ans3.) Call f(1):- i=1
n = 1+1 = 2 Static
i = 2

Call f(2):- i = 2
n = 2+2 = 4
i = 3

Call f(4):- i = 3
n = 4+3 = 7
i = 4

Call f(7):- i = 4
n = 7

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221B444

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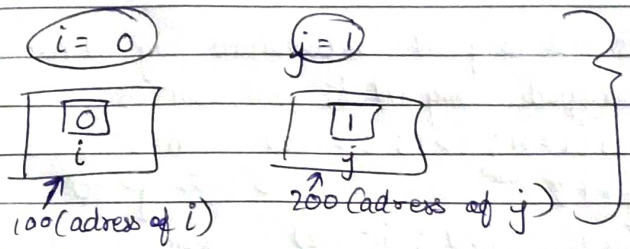
Ans 4)



f(&i, &j)

f(100, 200)

∴ p = 100 q = 200

→ inside main function

now, void f(int * p, int * q)

{

p = q → p = 200

*p = 2; → * 200

dereferencing

* 200 = j = 2

}

in function f.

∴ i = 0 j = 2

Ans 5) char c[] = "GATE 2011";

char * p = c;

p → 1000

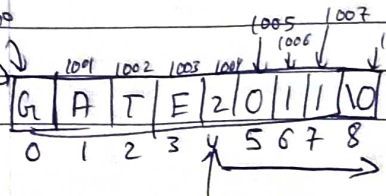
printf("%c", p + p[3] - p[1]);

1000 + E - A

1000 + 69 - 65

⇒ 1004

(b)



2011

Vinit Chaudhary
2218449

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Ans6) unsigned long int fun(unsigned long int n){
unsigned long int i, j=0, sum=0;
for(i=n; i>1; i=i/2)
j++;
for(; j>1; j=j/2)
sum++;
return sum;
}

$n = 2^{40}$

→ ∴ $j = 40$

sum = 0	$j = 40$
sum = 1	$j = 20$
sum = 2	$j = 10$
sum = 3	$j = 5$
sum = 4	$j = 2$
sum = 5	$j = 1$

5

Ans7)
```
#include <stdlib.h>
#include <stdio.h>
enum {false, true};
int main()
{
    int i=1;
    do
    {
        printf("%d\n", i);
        i++;
        if (i<15)
            continue;
    } while (false);
    getchar();
    return 0;
}
```

→ 1 printed

→ (i=2)

(2<15) condition pass → continue

∵ while(false)
∴ loop breaks

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Ans 8)
```
#include <stdio.h>
struct Ournode{
    char x, y, z;
};
int main(){
    struct Ournode p = {'1', '0', 'c'+2};
    struct Ournode *q = &p;
    printf("%c, %c", *((char*)q+1), *((char*)q+2));
    return 0;
}
```

p = {'1', '0', 'c'}

1000	1001	1002
1	0	c

*(1000+1) → *(1001) → 0

*(1000+2) → *(1002) → c

Ans 9)
```
char inChar = 'A';
switch(inChar){
    Case 'A':
    printf("Choice A \n");
    case 'B':
    printf("Choice B");
    case 'C':
    Case 'D':
    Case 'E':
    default:
    printH("No Choice");
}
```

Choice A printed

no break

Choice B printed

No Choice printed

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2218444

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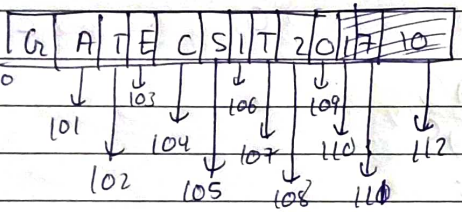
Ans (10) #include <stdio.h>
#include <string.h>
int main() {
char* c = "GRATECSIT2017";
char* p = c;
printf("%d", (int)strlen(c + 2[p] - 6[p] - 1));
return 0;
}

c + 2[p] - 6[p] - 1
= c + p[2] - p[6] - 1
= c + T - I - 1
= 100 + 84 - 73 - 1
= 110



String = 1 7 \0
∴ string length = 2

2 is the answer