Indian Institute of Technology Kanpur
ESC101 Fundamentals of Computing, 2018-19-a

Name: **ANSWER KEY**

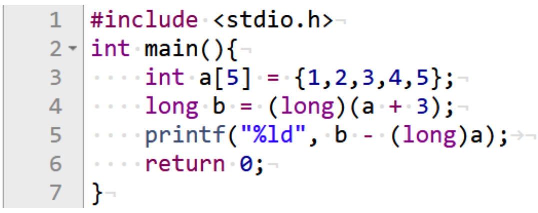
Roll:

Sect:

MINOR QUIZ

W10P*

P1



```c
#include <stdio.h>
int main(){
    int a[5] = {1,2,3,4,5};
    long b = (long)(a + 3);
    printf("%ld", b - (long)a);
    return 0;
}
```

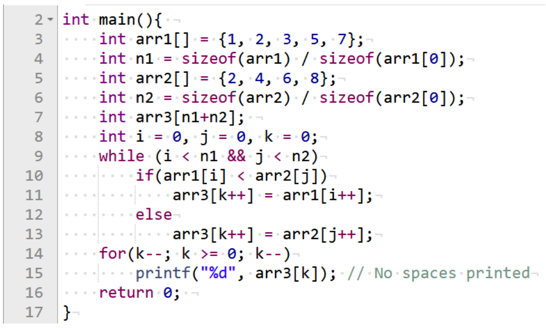
Q1: What is the output of this code?

GOLD SOLUTION

12

MAX MARKS

5



```c
int main(){
    int arr1[] = {1, 2, 3, 5, 7};
    int n1 = sizeof(arr1) / sizeof(arr1[0]);
    int arr2[] = {2, 4, 6, 8};
    int n2 = sizeof(arr2) / sizeof(arr2[0]);
    int arr3[n1+n2];
    int i = 0, j = 0, k = 0;
    while (i < n1 && j < n2)
        if(arr1[i] < arr2[j])
            arr3[k++] = arr1[i++];
        else
            arr3[k++] = arr2[j++];
    for(k--; k >= 0; k--)
        printf("%d", arr3[k]); // No spaces printed
    return 0;
}
```

Q2: What is the output of this code?
Note: whitespaces indicated using gray-colored characters as in Prutor

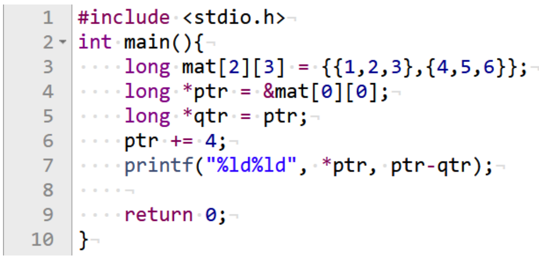
GOLD SOLUTION

76543221

MAX MARKS

5

P2



```c
#include <stdio.h>
int main(){
    long mat[2][3] = {{1,2,3},{4,5,6}};
    long *ptr = &mat[0][0];
    long *qtr = ptr;
    ptr += 4;
    printf("%ld%ld", *ptr, ptr-qtr);
    
    return 0;
}
```

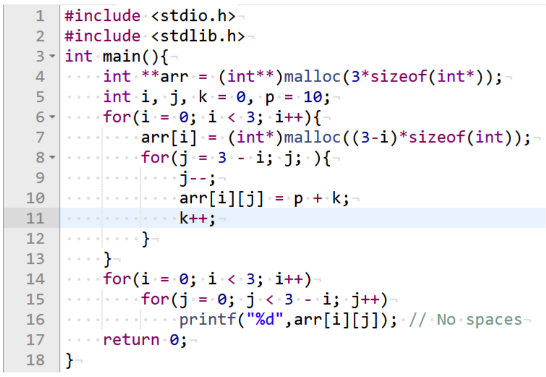
Q1: What is the output of this code?

GOLD SOLUTION

54

MAX MARKS

5



```c
#include <stdio.h>
#include <stdlib.h>
int main(){
    int **arr = (int**)malloc(3*sizeof(int*));
    int i, j, k = 0, p = 10;
    for(i = 0; i < 3; i++){
        arr[i] = (int*)malloc((3-i)*sizeof(int));
        for(j = 3 - i; j; ){
            j--;
            arr[i][j] = p + k;
            k++;
        }
    }
    for(i = 0; i < 3; i++)
        for(j = 0; j < 3 - i; j++)
            printf("%d",arr[i][j]); // No spaces
    return 0;
}
```

Q2: What is the output of this code?
Note: whitespaces indicated using gray-colored characters as in Prutor

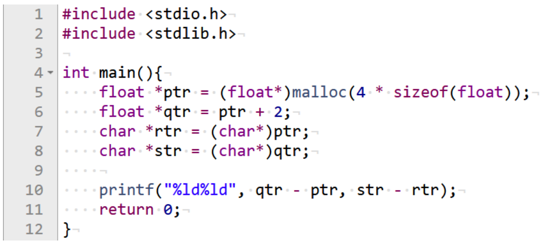
GOLD SOLUTION

121110141315

MAX MARKS

5

P3



```c
#include <stdio.h>
#include <stdlib.h>

int main(){
    float *ptr = (float*)malloc(4 * sizeof(float));
    float *qtr = ptr + 2;
    char *rtr = (char*)ptr;
    char *str = (char*)qtr;
    
    printf("%ld%ld", qtr - ptr, str - rtr);
    return 0;
}
```

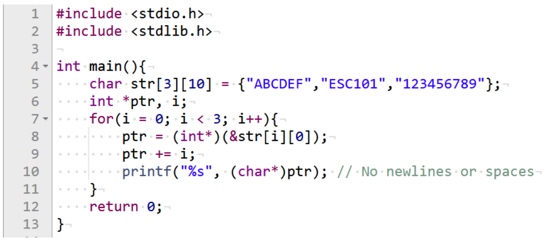
Q1: What is the output of this code?

GOLD SOLUTION

28

MAX MARKS

5



```c
#include <stdio.h>
#include <stdlib.h>

int main(){
    char str[3][10] = {"ABCDEF","ESC101","123456789"};
    int *ptr, i;
    for(i = 0; i < 3; i++){
        ptr = (int*)(&str[i][0]);
        ptr += i;
        printf("%s", (char*)ptr); // No newlines or spaces
    }
    return 0;
}
```

Q2: What is the output of this code?
Note: whitespaces indicated using gray-colored characters as in Prutor

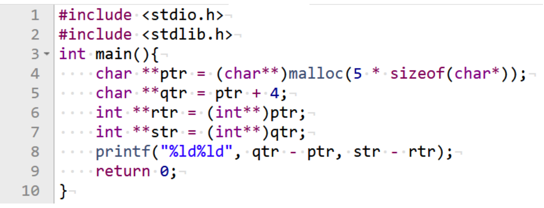
GOLD SOLUTION

`ABCDEF019`

MAX MARKS

5

P4



```c
#include <stdio.h>
#include <stdlib.h>
int main(){
    char **ptr = (char**)malloc(5 * sizeof(char*));
    char **qtr = ptr + 4;
    int **rtr = (int**)ptr;
    int **str = (int**)qtr;
    printf("%ld%ld", qtr - ptr, str - rtr);
    return 0;
}
```

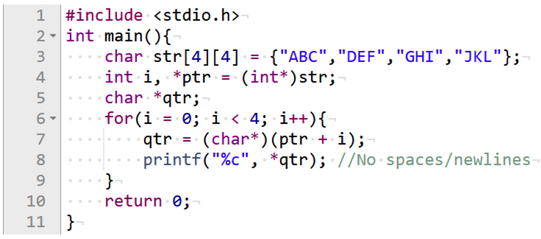
Q1: What is the output of this code?

GOLD SOLUTION

44

MAX MARKS

5



```c
#include <stdio.h>
int main(){
    char str[4][4] = {"ABC","DEF","GHI","JKL"};
    int i, *ptr = (int*)str;
    char *qtr;
    for(i = 0; i < 4; i++){
        qtr = (char*)(ptr + i);
        printf("%c", *qtr); //No spaces/newlines
    }
    return 0;
}
```

Q2: What is the output of this code?
Note: whitespaces indicated using gray-colored characters as in Prutor

GOLD SOLUTION

`ADGJ`

MAX MARKS

5