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

Name: **ANSWER KEY**

Roll:

Sect:

MINOR QUIZ

W9P*

P1

```c
#include <stdio.h>

int main(){
    char *a = NULL, *b = NULL;
    char x, y;
    x = 'a';
    y = 'b';
    a = &x;
    y = &b;
    printf("%c = %c and %c = %c", *a, x, *b, y);
    return 0;
}
```

```c
#include <stdio.h>

int main(){
    int a, b, *x, *y;
    a = 100 % 3;
    b = 2*10 + 5/2;
    x = &a;
    y = &b;
    *x = 100 % 6;
    *y = a + 102;
    b = *(&a) * 100;
    y = x;
    x = y;
    printf("%d %d %d %d", a, b, *x, *y);
    return 0;
}
```

Q1: Which is the incorrect line in this code? It is giving errors on Prutor.

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

GOLD SOLUTION	GOLD SOLUTION
9	4 400 4 4
MAX MARKS	**MAX MARKS**
5	**5**

P2

```c
#include <stdio.h>
#include <stdlib.h>
int main(){
    char *a = (char*)malloc(50 * sizeof(char));
    char **ptr = &a;
    char *qtr = a;
    scanf("%s", ptr);
    printf("%s", qtr);
    return 0;
}
```

```c
#include <stdio.h>
#include <stdlib.h>
int main(){
    int *a = (int*)malloc(5*sizeof(int));
    int i, k = 5, *p = a + 4;
    for( ; k > 0; p--)
        *p = 10 * k--;
    p++;
    for( ; p != (a + 5); p++)
        printf("%d", *p); // No spaces at all
    return 0;
}
```

Q1: Which is the incorrect line in this code? It is supposed to read input and print it back. Multiple solutions may be correct.

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

GOLD SOLUTION	GOLD SOLUTION
Solution 1: 7	1020304050
Solution 2: 5	
Any of these solutions will receive full marks	
MAX MARKS	**MAX MARKS**
5	**5**

P3

```c
1  #include <stdio.h>
2  #include <stdlib.h>
3  int main(){
4      int *x, y, i;
5      x = (int*)malloc(4 * sizeof(int));
6      y = (int*)malloc(4 * sizeof(int));
7      for(i = 0; i < 4; i++){
8          x[i] = i*i;
9          y[i] = i*i*i;
10     }
11     for(i = 0; i < 4; i++)
12         printf("%d", x[i] + y[i]);
13     return 0;
14 }
```

Q1: Which is the incorrect line in this code? It is giving errors on Prutor.

GOLD SOLUTION
4

MAX MARKS
5

```c
1  #include <stdio.h>
2  #include <stdlib.h>
3  int main(){
4      int *arr = NULL, *ptr, k = 0;
5      arr = (int*)malloc(5 * sizeof(int));
6      for(ptr = arr; k < 5; ptr++)
7          *ptr = 2 * ++k;
8      for(k = 0; k < 5; k++){
9          printf("%d", arr[k]);
10         if(k < 4) printf(" "); // Print a single space
11     }
12     return 0;
13 }
```

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

GOLD SOLUTION
2 • 4 • 6 • 8 • 10

MAX MARKS
5

P4

```c
1  #include <stdio.h>
2  #include <stdlib.h>
3  int main(){
4      int *x, *i;
5      x = (int*)malloc(4 * sizeof(int));
6      for(i = 0; i < 4; i++)
7          x[i] = i*i;
8      for(i = 0; i < 4; i++)
9          printf("%d", x[i]);
10     return 0;
11 }
```

Q1: Which is the incorrect line in this code? It is giving errors on Prutor.

GOLD SOLUTION
4

MAX MARKS
5

```c
1  #include <stdio.h>
2  #include <stdlib.h>
3  int main(){
4      int *x, i, t = 2;
5      x = (int*)malloc(5 * sizeof(int));
6      for(i = 0; i < 5; i++)
7          x[i] = 2 * i + 1;
8      x += 2;
9      for(i = t; i > (t-5); i--)
10         printf("%d", *(x+i)); // No spaces in output
11     return 0;
12 }
```

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

GOLD SOLUTION
97531

MAX MARKS
5