

# Programming in C

## Strings-I

DPP-01

**[NAT]**

1. Consider the following codes P and Q as:

```
P : char* p = "GATEWallah";
    p[5] = 'A';
    printf("%s", p);
```

```
Q: char* p = "GATEWallah";
    char* q = p;
    q[5] = 'A';
    printf("%s", q);
```

The number of INCORRECT codes is/are \_\_\_\_\_.

**[MCQ]**

```
2. P : char s1[] = "GATE";
    char s2[] = "GATE";
    if(s1 == s2) printf("YES");
    else
    printf("NO");
Q : char s1[] = "GATE";
    char s2[] = "GateWallah";
    if(*s1 == *s2) printf("YES");
    else
    printf("NO");
```

The outputs are-

- (a) P = YES    Q = YES
- (b) P = YES    Q = NO
- (c) P = NO    Q = YES
- (d) P = NO    Q = NO

**[MCQ]**

```
3. P : char s[20];
    printf("Enter your GATE stream with year: \n");
    scanf("%s", s);
    printf("%s", s);
Q : char s[20];
    printf("Enter your GATE stream with year: \n");
    gets(s);
    printf("%s", s);
```

If the input string is "CS 2023", the outputs are-

- (a) P=CS 2023    Q = CS 2023
- (b) P=CS    Q = CS

- (c) P=CS 2023    Q = CS
- (d) P = CS    Q = CS 2023

**[MCQ]**

```
4. #include<stdio.h>
    #include<string.h>
    int main()
    {
        char s[20] = "GATEWallah";
        printf("%s", s+4);
        s[4] = 0;
        printf("%s", s);
        return 0;
    }
```

The output is-

- (a) WallahGATE
- (b) EWallahGAT
- (c) WallahGATE0allah
- (d) EWallahGAT0allah

**[MCQ]**

```
5. #include<stdio.h>
    #include<string.h>
    int main()
    {
        char s[20] = "GATEWallah2023";
        s[10] = '0';
        printf("%s", s+s[3]-s[1]);
        return 0;
    }
```

The output printed is-

- (a) Wallah0    (b) Wallah2023
- (c) Wallah0023    (d) Wallah

**[MCQ]**

```

6. #include<stdio.h>
#include<string.h>
void f(char *p)
{
    static int q=2;
    q=q+3;
    p[q]+=2;
}
int main()
{
    char s[20]="GATEWallahbesthai";
    int i=0;
    for(i=0;i<3;i++){
        f(s);
    }
    printf("%s",s);
    return 0;
}

```

The output string printed is-

- (a) GATEWcllchbgsthai
- (b) GATEWcllbhbgsthai
- (c) GATEWcllchbesthai
- (d) GATEWcllchbesthai

**[MCQ]**

```

7. #include<stdio.h>
#include<string.h>
void f(char *p){
    if(*p!=0){
        printf("%c", *p);
        f(p+1);
    }
    printf("%c", *p);
}
int main()
{
    char s[5]="GATE";
    f(s);
    return 0;
}

```

The output is-

- (a) GATEGATE
- (b) ETAGGATE
- (c) ETAGETAG
- (d) GATEETAG

**[NAT]**

```

8. #include<stdio.h>
#include<string.h>
int main()
{
    int a=1;
    char b[]="GATE2024";
    char c[]="GATE2024";
    int d=strcmp(b,c);
    if(d==0)
        a=printf("GATEWallah");
    printf("%d",a);
    return 0;
}

```

The value of a is \_\_\_\_\_.

## Answer Key

1. (2)
2. (c)
3. (d)
4. (a)

5. (c)
6. (a)
7. (d)
8. (10)



## Hints and solutions

1. (2)

`char*p = "GATEWallah";`

Memory is allocated to "GATEWallah" in static/read only memory. So, its content cannot be updated  
`p[5] = 'A'`

It is not allowed as 'p' is the only entry point to the string constant.

∴ Both P and Q are not valid.

2. (c)

P: `if (s1 == s2)` // It is comparing the base addresses of two different Strings.

→ false

∴ else part will be executed

↓

No is printed

Q:

s1:

G	A	T	E
---	---	---	---

100

s2:

G	A	T	E	W	a	l	l	a	h
---	---	---	---	---	---	---	---	---	---

200

`if(*s1 == *s2) ⇒ if(*100 == *200)`

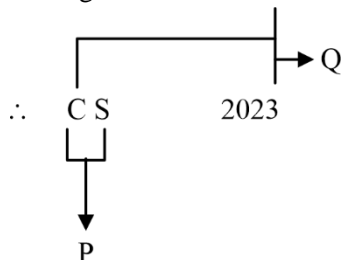
\* → value at

↓  
G == G

→ TRUE

3. (d)

`scanf()` halts reading as soon as it encounters whitespace. `gets()` ignores the whitespace and stops reading when new-line is found.



∴ Output of P: CS

Output of Q: CS 2023

4. (a)

100	101	102	103	104	105	106	107	108	109	110	
S:	G	A	T	E	<del>W</del>	a	l	l	a	h	\0

\0

`printf("%s", s + 4);` // Wallah

↓

104

`s[4] = 0;` //\*(100+4) = 0 where 0 is the ASCII of NULL character.

`print("%s", s);` // It prints the string till it encounters first NULL;

⇒ Output is: WallahGATE

5. (c)

100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	
S:	G	A	T	E	W	a	l	l	a	h	<del>/</del>	0	2	3	\0

0

`s[10] = '0';` // Here '0' is the numer 0

`printf("%s", s+s[3]-s[1]);`

↓

100 + 69 - 65 = 104

∴ Output is: Wallah0023

6. (a)

S:

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
G	A	T	E	W	a	l	l	a	h	b	e	s	t	h	a	i

starting address of S: 100

i 0

f(100)

p 100

q / 5

`p[5] += 2;` // `p[5] = c`

i 1

f(100)

p 100

q / 8

`p[8] += 2;` // `p[8] = c`

i 2

f(100)

p 100q 8 11

p[11] += 2; // p[11] = g

Output: G A T E W c l l c h b g s t h a i

7. (d)

G	A	T	E	\0
100	101	102	103	104

f(100) *100==G!=0→True <b>(1)</b> printf( ) executed → G f(101) <b>(8)</b> printf( ) executed → G	f(101) *101==A!=0→True <b>(2)</b> printf( ) executed → A f(102) <b>(7)</b> printf( ) executed → A
f(102) *102==T!=0→True <b>(3)</b> printf( ) executed → T f(103) <b>(6)</b> printf( ) executed → T	f(103) *103==E!=0→True <b>(4)</b> printf( ) executed → E f(104)→NULL is present <b>(5)</b> printf( ) executed→E

∴ Output is: GATEETAG

8. (10)

int a=1;

char b[]="GATE2024";

char c[]="GATE2024";

int d=strcmp(b,c);

//When the strings are equal, strcmp returns 0.

if(d==0)

a=printf("GATEWallah");

//printf() returns the number of characters it printed.

printf("%d",a);//10

return 0;

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