CS & IT ENGINEERING

C-Programming

Control Flow Statement
Discussion Notes

DPP-02

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Question

#Q.
```
#include<stdio.h>
int main(){
    int x = 0, y = 0, a;
    a = x && ++y;
    printf("%d %d", x, y);
    return 0;
}
```

00

x = 0 , y = 0 , a

a = 0 && ++y will Not execule

Logical → Short circuit code

Logic short

A 11

B 10

C 01

[D]

D 00

Question

#Q.
```
#include<stdio.h>
int main(){
   int x=3, y=4, z=4;
   printf("%d", (z>=y>=x?100:200));
   return 0 ;
}
```

x = 3 , y = 4, z = 4

Conditional operater

>= Left Associative operator

(4 >= 4 >= 3)

1 >= 3

False

[B] Ans

A 100

B 200

C 0

D 1

Question

#Q.
```
#include <stdio.h>
int main(){ int a = 80;
switch(-12%45+36/9/2*16+60) {
    case 80: a = a+10;
    case 5: a++;
    default : a = a>>2;
}
printf ('%d", a) ;
}
```

(A) 20

(B) 21

(C) 22 ✓

(D) 23

[C] Ans

It: a = 80

$-12\%45+36/9/2*16+60$

$= -12+4/2*16+60$

$= -12+32+60$

$= 20+60 = 80$

Case 80: a = 90

case 5: a = 91

a = 91 >> 2

$= \lfloor 91/2^2 \rfloor = \lfloor 91/4 \rfloor$

$= 22$

Question

#Q. Question

```
int main()
{
    int a =50;
    switch(a)
    {
        default: a=45;
        case 49: a++;
        case 50: a--;
        case 51: a =a+1;
    }
    printf("%d",a);
}
```

int a = 50;

Switch (a) Switch (50)

Case 50 will match

a 49

a : 50

No break present

[c]

A 51

B 45

C 50

D Error

Question

#Q. Consider the following program

```
#include<stdio.h>
int main(){
    int i= -1;
    for (; ++i; i++){
            printf("I am a good Student");
    }
    return 0 ;
}
```

Number of times loop is Executed

for loop

i = -1

for (; ++i ; i++)

No initialization

++i = i [-1 | 0]

(A) 0

(B) 1 Condition is false

(C) Infinite

(D) 2 No - times - 0 time

[A]

Question

#Q.
```
#include <stdio.h>
int main() {
    int i=2+4%6+9/10;
    while (i<10){
            printf("I am good student");
            i++;
        }
        return 0 ;
        }
```

The number of times printf statement executed is ____

i = 2 + 4 % 6 + 9 / 10

= 2 + 4 + 0 = 6

i 6

6 < 10 — (1)

7 < 10 — (2)

8 < 10 — (3)

9 < 10 — (4)

11 < 10 ×

No. of times printf execute = 4

Question

#Q. Consider the following C program

```
#include <stdio.h>
int main(){
float sum = 0.0, j = 1.0, i = 2.0;
while (i/j > 0.0625){
        j= j+j;
        sum = sum + i/j;
        printf("%f\n", sum);
}
return 0;
}
```

The number of times the variable sum will be printed, when the above program is executed, is _____.

i/j > 0.0625

① 2/1 > 0.0625
j = 2
sum = 0 + 2/2 = 1

② 2/2 > 0.0625
j = 4
Sum = 2/4 + 1 = 1.5

③ 2/4 > 0.0625
j = 8
sum = 1.5 + .25 = 1.75

④ 2/8 > 0.0625
j = 16
sum = 1.75 + .125
= 1.875

⑤ 2/16 > 0.0625
.125
j = 32
Sum = 1.875
.0625
1.9375

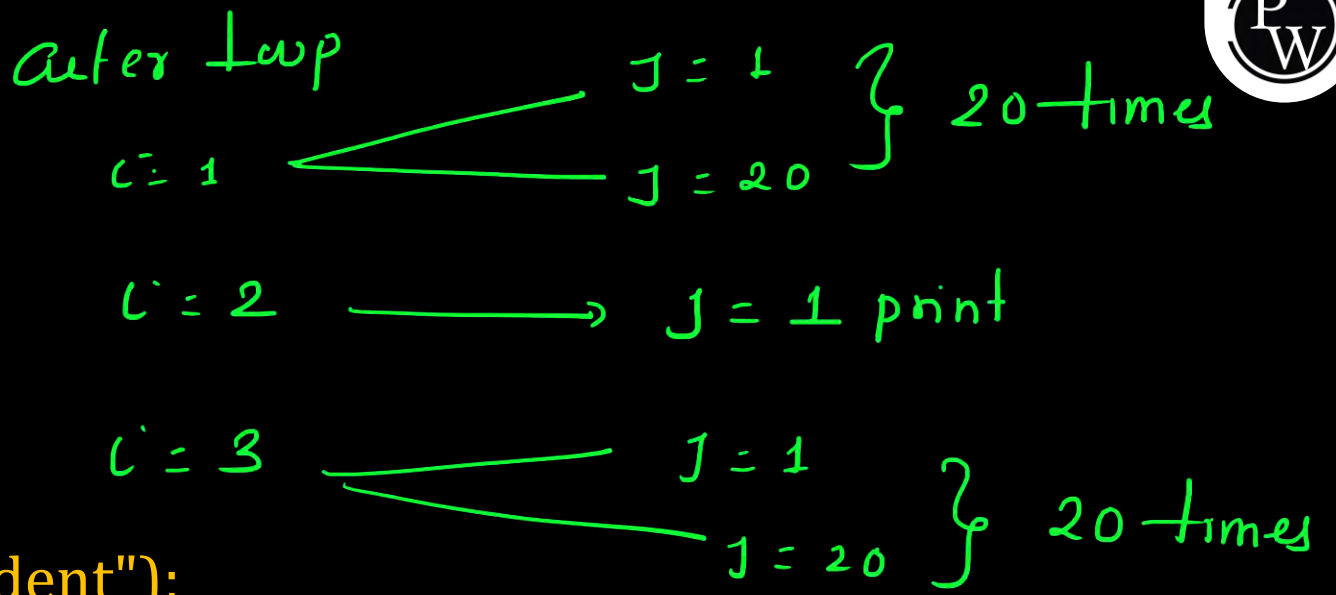
⑥ 2/32 > 0.0625
false

final value of sum 1.9375

Question

#Q.
```
#include <stdio.h>
int main() {
    int i,j;
    for(i =1;i<=3;i++){
        for(j=1;j<=20;j++){
                printf("I am a good student");
                        if(i==2) break;
                }
        }
                return 0 ;
}
```

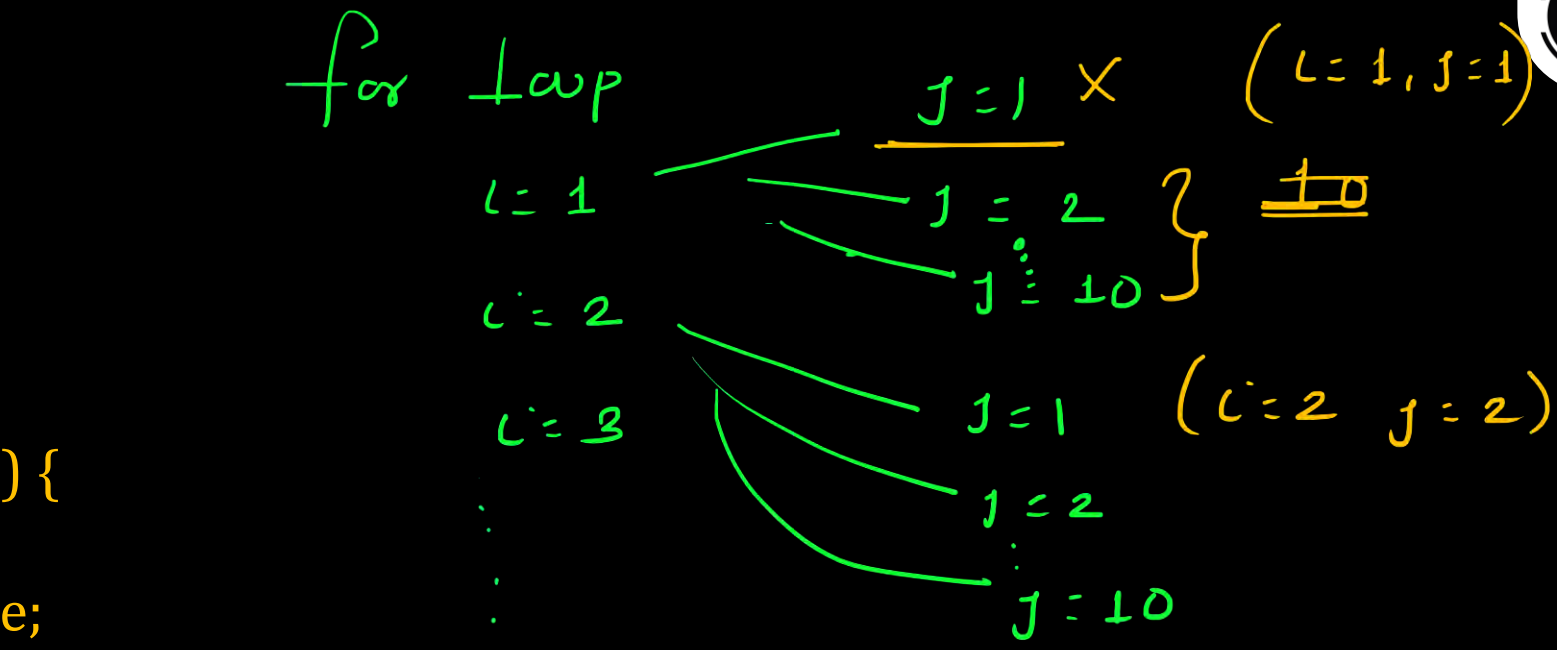
The number of times printf will be executed is 41.



times printf execute

Question

#Q.
```
#include<stdio.h>
void main () {
int sum =0;
for (int j =1; j<=20; j++)
for (int i = 1; i <= 10; i++) {
    if (i == j)
                    continue;
    sum++;
    }
                    printf("%d\n", sum);
}
```
The output of the program is _____



(A) 200

200 - 10 = (190)

(B) 190

(C) 180

(D) 20

Question

#Q. Consider the function func shown below:

```
#include <stdio.h>
int main() {
        int num=128;
        int count = 0;
        while (num/2) {
                count++;
                num>>= 1;
        }
        printf ("%d", count);
}
```

The value printed is 7.

num = 128

count = 0

~~while~~ (condition)

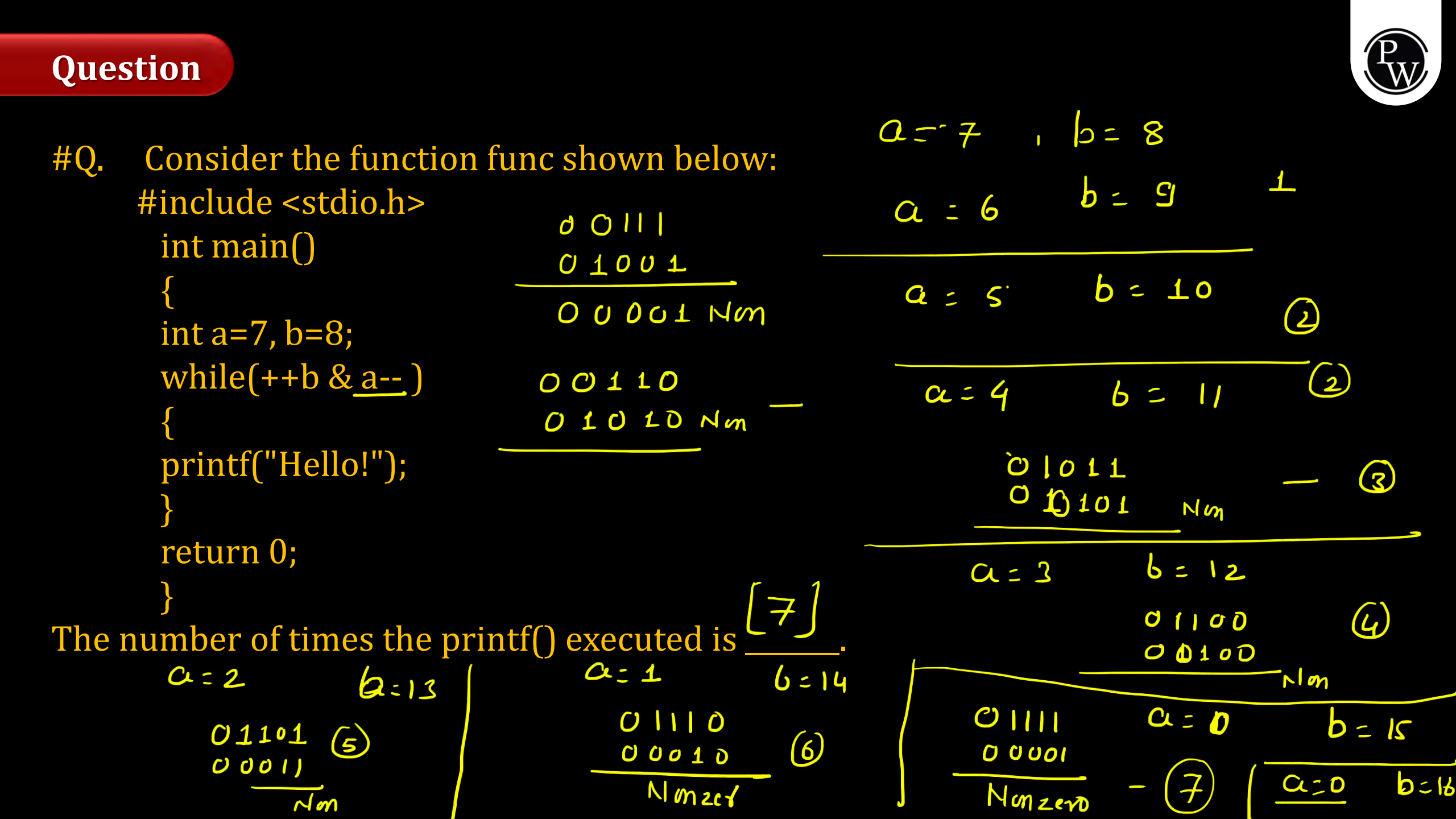
	count	num
$128/_2 = 64$	1	64
$64/_2 = 32$	2	32
$32/_2 = 16$	3	16
$16/_2 = 8$	4	8
$8/_2 = 4$	5	4
$4/_2 = 2$	6	2
$2/_2 = 1$	7	1
$1/_2 = 0$	condition is false	

Question

#Q. Consider the function func shown below:

```
#include <stdio.h>
  int main()
  {
  int a=7, b=8;
  while(++b & a-- )
  {
  printf("Hello!");
  }
  return 0;
  }
```

The number of times the printf() executed is [7].



Question

#Q. Consider the function func shown below:

```
int main() {
  int a=1, b=2;
  do
  {
  while(b++)
  {
  b=b-a;
  a=a+b;
  }
  }
  while(a++<2);
  printf("%d\t%d", a, b);
  return 0;
  }
```

The output is-

(a) 3 0

(b)4 2

(c) 3 2

(d) ~~4 1~~

a = 1, b = 2 ~~3~~ ~~2~~ 3

while (2)

b = 3 − 1 = 2

a = 1 + 2 = 3

while (2)

b = 3 − 3 = ~~0~~ 1

a = 3 + 0 = 3

while (0)

outer loop

3 < 2 false

come out of loop

post increment

a = 4

b = 1

[D] Answer

THANK - YOU