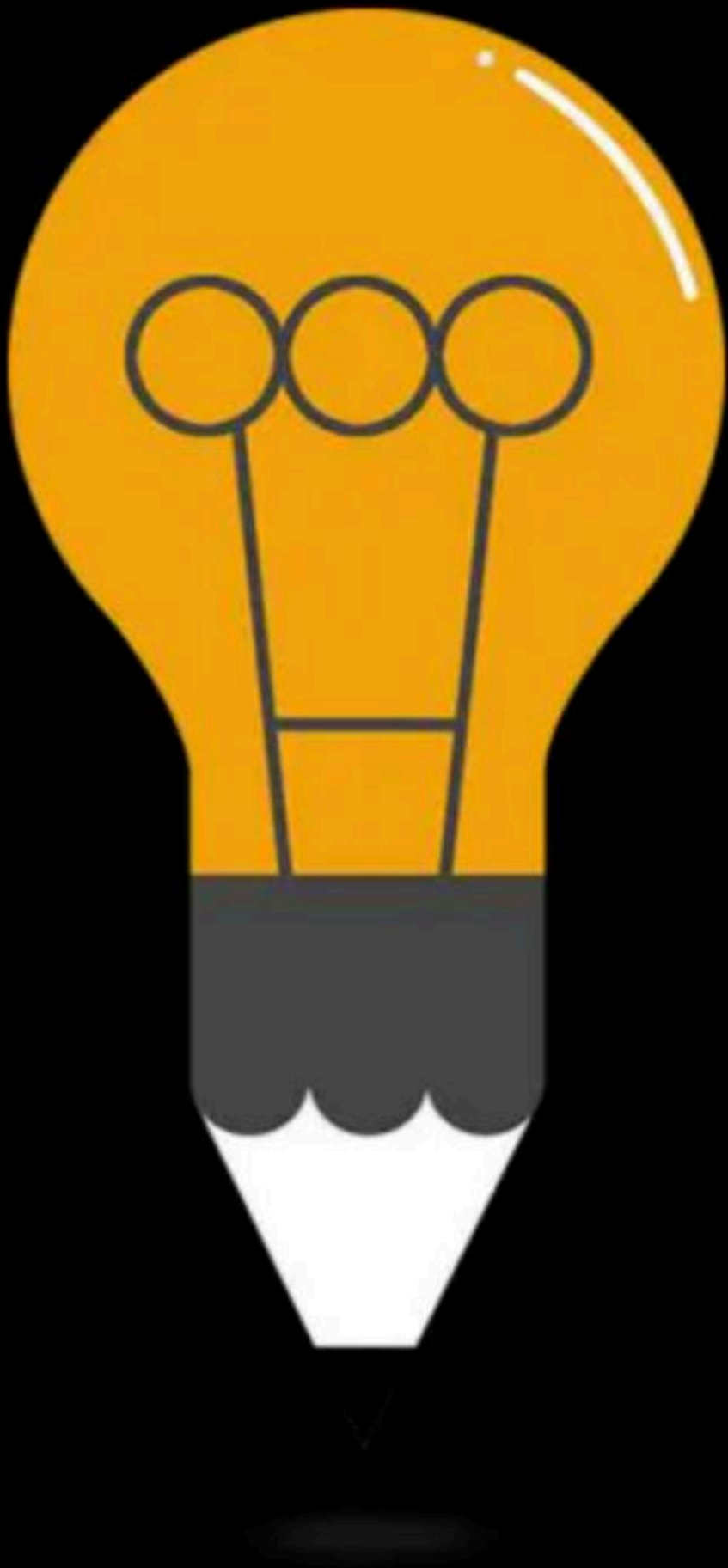




Doubt Clearing Session

Course on C-Programming & Data Structures: GATE - 2024 & 2025



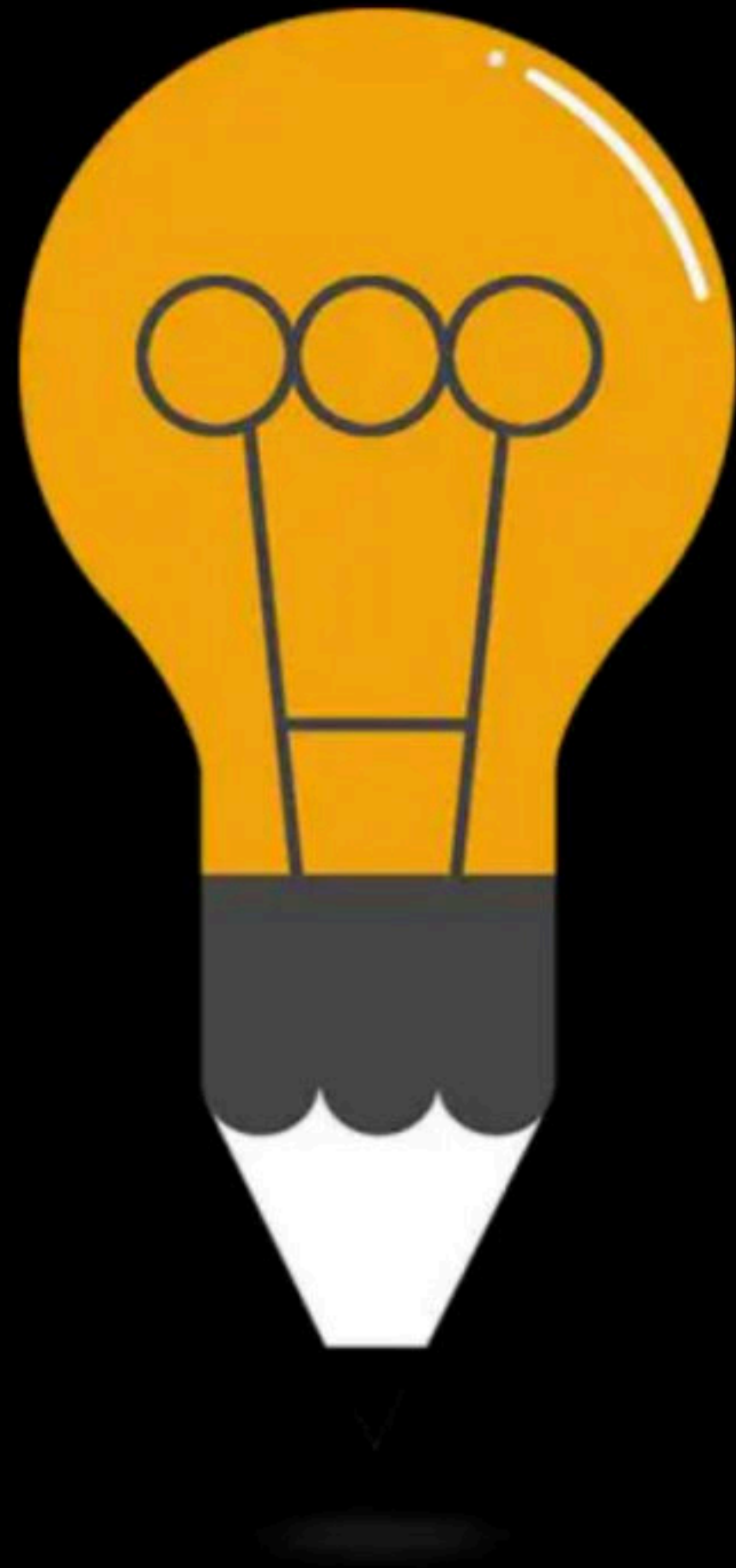
Doubts & Arrays, Pointers

By: Vishvadeep Gothi

▲ 2 • Asked by Srishti

sir isme p ka value bhi print ho rha hai why no error?

main.c		Run	Output
1	// Online C compiler to run C program online		/tmp/gPcbhSuXN0.o
2	#include <stdio.h>		2138097344
3			2138097344
4	int main() {		
5			
6	int A[5]={},*p,x;		
7	x=(int)A;		
8	p=x;		
9	printf("%d\n%d",x,p);		
10	return 0;		
11	}		



DPP 2

By: Vishvadeep Gothi

Question

Which of the following is not valid identifier?

- A. Abc_123
- B. _123Abc
- C. Abc123_
- ✓ D. Abc@123

Question

Which of the following is valid identifier?

- ✓ A. Abc
- B. !\$Abc
- C. Abc^123
- D. Abc 123

Question

Which of the following is valid identifier?

A. 123 Abc

B. int

C. goto

 D. ab_

Question

Which of the following is not unary operator?

- A. ++
- B. -
- C. sizeof
- ☒ D. ?:

Question

Which of the following is necessary while evaluating the expressions?

- A. Only associativity is to be taken care. There is no need of precedence.
- B. Only precedence is to be taken care. There is no need of associativity.
- ☒ C. Both associativity and precedence have to be taken care of.
- D. Precedence is necessary but associativity is automatically taken care by the machine.
- E. Associativity is necessary but precedence is automatically taken care by the machine.

Question

Predict the output of the following program:

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

```
int main()
```

```
{
```

```
printf("%lu %lu %lu %lu", sizeof(char), sizeof(int), sizeof(float), sizeof(double));
```

```
getch();
```

1

2

4

8

```
return 0;
```

```
}
```

a) 1 4 4 8

✓ b) 1 2 4 8

c) 1 2 4 16

d) 1 4 8 16

e) Machine dependent

Question

Predict the output of the following program:

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

```
void main(){
```

```
    short z='a';
```

```
    z+=2;
```

```
    z++;
```

```
    printf("%c,%d", z, z);
```

```
    getch();
```

```
}
```

☒ a) d,100

b) a,97

c) c,99

d) Compilation Error

e) Runtime Error

Handwritten note: z = ~~97~~ 99 100



Question

Predict the output for the following program:

```
#include <stdio.h>
int main() {
    int s = 0;
    int t = (~s == 1);
    s = ~s;
    printf("%d,%d", s, t);
    return 0;
}
```

a) 1,0

b) 0,0

☒ c) -1,0

d) 255,0

e) Compiler Dependent

$s = 0$

$t = 0$

$s = \frac{111\dots1}{\downarrow}$

2's comp

\downarrow

-1

~ is binary complement

$\sim 1010 \Rightarrow 0101$

$\sim 1101 \Rightarrow 0010$

Question

Predict the following program's output:

```
void main() {  
    int x=10,y=20,z=30;  
    x=x+y-z;  
    z=z<<1;  
    x=(x==0)?(x=y<<1&0):z;  
    y=10--;  
    printf("%d,%d,%d",x,y,z);  
}
```

a) 0,10,60

b) 1,10,60

c) 1,9,60

d) 0,9,60

☒ e) Compilation Error

$x = 10$

$y = 20$

$z = 30$

$y=10--;$ \rightarrow $++$ and $--$ used with variables only

Question

Predict the output of the following program:

```
int main()
{
    int x=2,y=3,z;
    z=(x&y)?10:20;
    z=z&(z-1);
    printf("%d",z);
    return 0;
}
```

a) 10

b) 20

☒ c) 8

d) 2

e) 3

$x = 2$
 $y = 3$
 $z = 10$


$$\begin{array}{r} 00010 \\ 00011 \\ \hline 00010 \end{array}$$

$$\begin{array}{r} 1010 \\ 1001 \\ \hline 01000 \Rightarrow 8 \end{array}$$

Question

Find the output of the following program.

```
#include<stdio.h>
int main()
{
    printf("%d",printf("GATE EXAM"));
    getch();
    return 0;
}
```

- a) Compilation Error
- b) 9GATE EXAM
- c) GATE EXAM1
- d) 1GATE EXAM
-  e) GATE EXAM9

Question

Find the output of the following program.

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

```
int main()
```

```
{  
    printf("%d",printf("%d",printf("GATE EXAM")));  
    getch();  
    return 0;  
}
```

GATE Exam91

- a) Compilation Error
- ☒ b) GATE EXAM91
- c) GATE EXAM910
- d) 19GATE EXAM
- e) 109GATE EXAM

Question

Predict the output of the following program:

```
int main()
{
    int x,y,z;
    x=y=z=10<<1;
    y=y>>1^3;
    z=10-3*2*2+20<<1 && 8-6/3*2;
    printf("%d,%d,%d",x, y, !z);
}
```

a) 20,9,1

b) 20,1000,0

☒ c) 20,9,0

d) 20,1000,1

e) Compiler error

$$x = 2^6$$

$$y = 2^9$$

$$z = 10 - 12 + 20 << 1$$

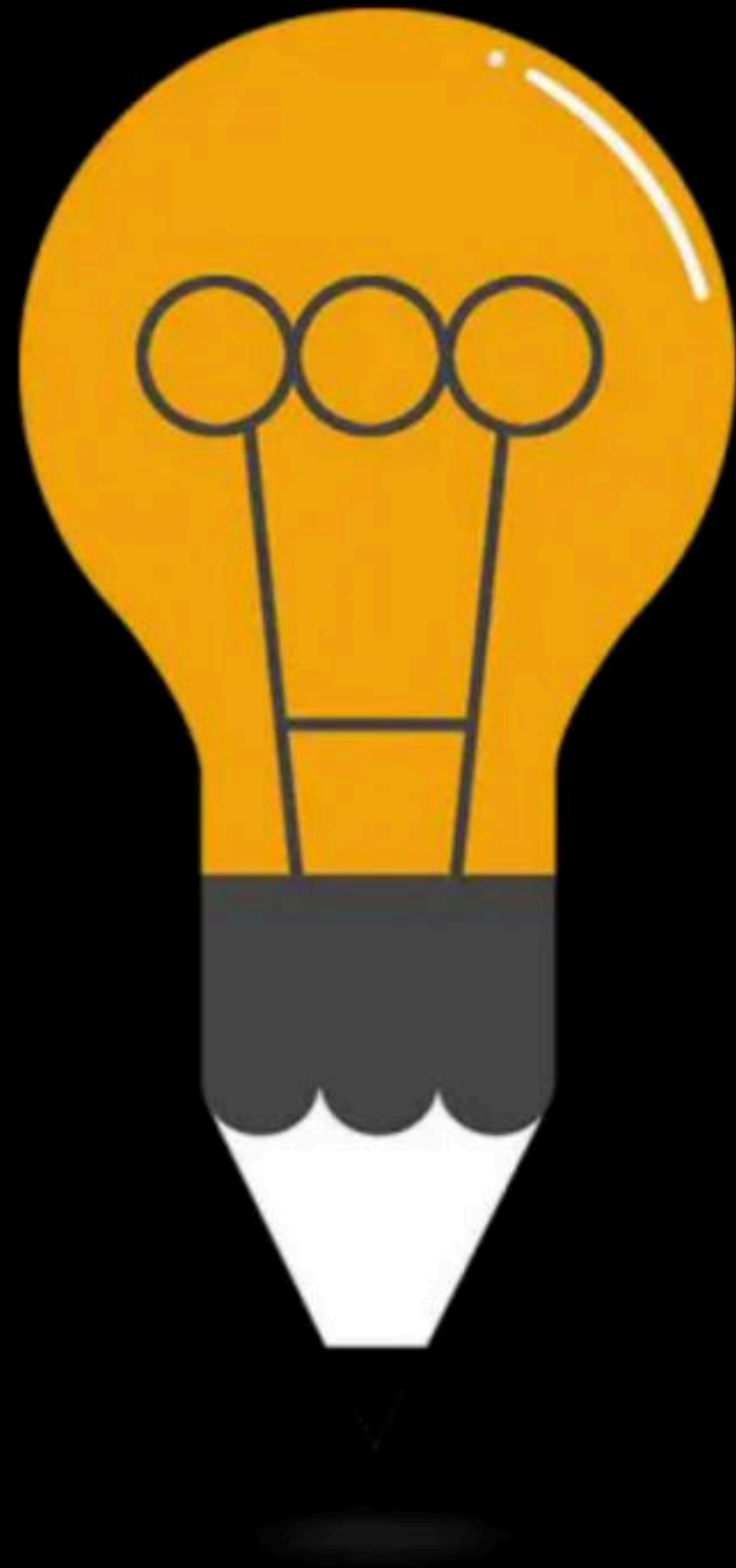
$$20 / 2$$

$$+ -$$

$$<< >>$$

$$44$$

$$\begin{array}{r} 0001010 \\ 0000000 \\ \hline 0001010 \end{array}$$




DPP 2

By: Vishvadeep Gothi

Question

What is the output of the following programs-

```
#include<stdio.h>
void main(){
    int i=0;
    if(i==2) printf("This is else");
    else printf("This is if");
    printf("%d",i);
}
```

- (a) This is if2
-  (b) This is if0
- (c) This is else2
- (d) This is else 0
- (e) Compilation error

Question

What is the output of the following programs-

```
#include<stdio.h>
void main(){
int i=20,j=20;
if(i==2?(i=21):(j=21))
    printf("GATE 2023");
else
    printf("Happy Learning");
printf("%d%d",i,j);
}
```

- ✓ (a) GATE 2023 2021
- (b) Happy Learning 2021
- (c) GATE 2023 2020
- (d) Happy Learning 2020
- (e) Error

i = 20
j = ~~20~~ 21

GATE 2023 2021

Question

What is the output of the following programs-

```
void main(){
int i=1,j=3;
if(--i || (j==4) ) {
if(printf("You are in first if")) printf("%d%d",i,j);
if(++i) printf("You are in second if");
}
else printf("You are in else");
}
```

*i = 0
j = 3*

- (a) You are in first if 0 4 You are in else
- (b) 0 4 You are in second if
- (c) You are in first if 0 4 You are in second if
- (d) You are in first if 0 3 You are in second if
- (e) Compilation error

(f) you are in else

Question

What is the output of the following programs-

```
void main(){
int choice=2;
switch(choice){
case 1: printf("1");
case 2: printf("2");
case 3: printf("3");
    break;
default: printf("Default");
}
}
```

- (a) Compiler error
- (b) Runtime error
- ☒ (c) 23
- (d) 2
- (e) Default

Question

What is the output of the following programs-

```
void main(){  
int choice=2;  
switch(choice){  
case 1: printf("One");  
case 2: printf("Two");  
case 3: printf("Three");  
break;  
default: printf("Why here?");  
}  
}
```

- (a) Compiler error
- (b) Runtime error
- (c) Two
- ☒ (d) Two Three
- (e) Why here?

Question

What is the output of the following programs-

```
void main(){  
float choice=1.6;  
switch(choice){  
case 1.6: printf("GATE 2023"); break;  
default: printf("Why Here?"); break;  
}  
}
```

float not allowed in switch case
← double

- (a) GATE 2023
- (b) Why Here?
- (c) Runtime error
- ☒ (d) Compilation error
- (e) Nothing displayed

Question

What is the output of the following programs-

```
void main(){
    int j=4;
    switch(j)
    {
    default: printf("Default"); break;
    case 1: printf("V1");
    case 2: printf("V2");
    case 3: printf("V3");
    }
}
```

- (a) Runtime error
- (b) Compilation error
- (c) V1V2V3
- ☒ (d) Default

Question

What is the output of the following programs-

```
int main(){
int a=12;
switch(a){
case 11: a++;
case 12: a- -;
case 13: a=a+1;
default: a=27;
}
printf("%d",a);
}
```

a = 12 11 12 27

27

- (a) Runtime error
- (b) Compilation error
- (c) 35
- (d) 12
- (e) 11

✓ (f) 27

Question

What is the output of the following programs-

```
void main(){  
    char ch='v';  
    switch(ch+1){  
    case 'v': printf("I am Vishvadeep");  
    case 'w': printf("I am Wonderful");  
    default: printf("Yaha Kyu?");  
    }  
}
```

- (a) I am Vishvadeep
- (b) I am Wonderful
- (c) Yaha Kyu?
- (d) Compilation error
- (e) Runtime error

ch = 'v'

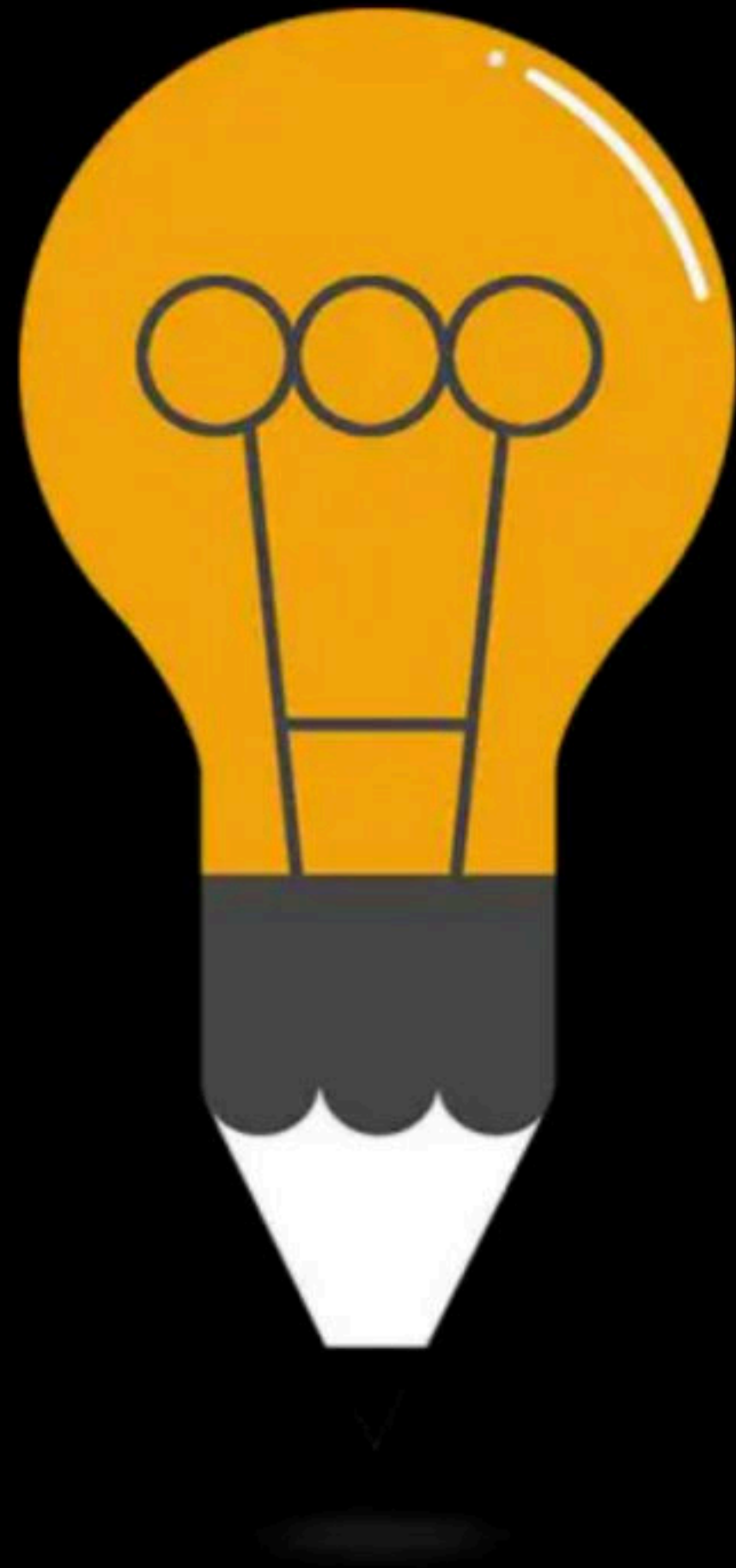
(b) I am wonderful yaha kyu

Question

What is the output of the following programs-

```
int main(){  
printf("Let's Party\n");  
exit(0);  
printf("Let's Study");  
Return 0;  
}
```

- ☒ (a) Let's Party
- (b) Let's Party
Let's Study
- (c) Let's Party
- (d) Compilation error



DPP 3

By: Vishvadeep Gothi

Question

What is the output of the following programs-

```
void main(){  
int m, count=0;  
for(int i=1;i<=m; i*=2)  
{  
    count+=1;  
}  
}
```

- (a) $\text{count} = \text{ceil}(\log m) - 1$
- (b) $\text{count} = \text{floor}(\log m) + 1$
- (c) $\text{count} = \text{ceil}(\log m)$
- (d) $\text{count} = \text{floor}(\log m) - 1$
- (e) None of the above

Question

What is the output of the following programs-

```
void main() {  
    int i, j, k, count = 0, n;  
    for(i = 0; i <= n; i++) {  
        for(j = 0; j <= n; j++) {  
            for(k = n/3; k <= n; k += n/3) {  
                count++;  
            }  
        }  
    }  
    printf("%d, %d, %d, %d", i, j, k, count);  
}
```

$n = 6$

7 times

7

3

$k = 2, 4, 6, 8$

$7 * 7 * 3 = 147$

7 7 8 147

Question

What is the output of the following programs-

```
for(int i=k, j=m; k<=n && j>=t; k++, j--)  
{  
}
```

Assume initially $k < n$ and $m > t$.

When will the loop terminate?

- (a) $k \leq n \parallel j \geq t$
- (b) $k \leq n \&\& j \geq t$
- (c) $k > n \parallel j < t$
- (d) $k > n \&\& j < t$

Question

What is the output of the following programs-

```
void main(){
int i,j=1,count=0,n;
for(i=n;i>0;i/=2)
count=count+1;
while(j<n)
{
count--;
j*=2;
}
printf("%d",count);
}
```

Question

What is the output of the following programs-

```
void main(){
int i, j, count=0, n;
for(int i=1; i<n; i*=2){
    for(j=1; j<n; j*=2){
count++;
Break;
    }
}
do
{
Count--;
} while(0);
printf("%d,%d,%d",i, j, count);
}
```

2-D array

A

A+0

&A

&A[0] + 1

&A[2][3]

A[3][2]

$$x = \underbrace{a++}_{5}$$

$$x = ++a$$

$$a = 5$$

$$a = 6$$

$$x = a$$

$$a = a + 1$$

$$a = a + 1$$

$$x = a$$

Question

Consider the following C-language program:

```
#include <stdio.h>
int main()
{
    int x = -5, y = 8;
    x = x + y - (y = x);
    printf("%d", x * y);
    return 0;
}
```

The value printed by the above program is _____?

$$y = -5$$

$$x = 3 - (-5) = 8$$

$$-40$$

$$-40$$

Question

Consider following C-language program:

```
#include <stdio.h>
int main()
{
    int i, j;
    for (i=0; i<=100; i++)
    for (j=0; j<=100; j++)
        printf("%6d\n", '*');
    return 0;
}
```

101 times

101 times

C

The number of times * is printed = ____ ?

$$101 + 101 \Rightarrow 10201$$

Question

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

```
int main() {
```

```
int i;
```

```
char CA[] = {'L', 'E', 'T', 'S', 'C', 'R', 'A', 'C', 'K', 'I', 'T'};
```

```
char *cp = CA;
```

```
for(i=0; i<=4; i++)
```

```
printf("%c", *(cp+cp[1]-cp[6]+i));
```

```
return 0;
```

```
}
```

CP = 506

0 1 2 3 4 5 6 7 8 9 10

506 + 5 - 10 + 0 = 501

What does the above program print?

CRACK

Question

Which of the following statements is/are not true about C-Programming?

✓ At the end of while statement in while loop, semicolon can not be placed otherwise program will give an error?

CORRECT ANSWER

do while is exit controlled loop

✓ In switch case, only one case runs for a given value in switch

CORRECT ANSWER

Array name is a constant pointer which stores address of first element of array

Question

Consider the following C-language program:

```
#include <stdio.h>
#include <math.h>
int main() {
    float x=4.37;
    printf("%f ", floor(x));
    printf("%f\n", ceil(x));
    return 0;
}
```

The output printed by above program is?

4.300000 4.400000

4.30 4.40

4.0 5.0

✓ 4.000000 5.000000

CORRECT ANSWER

Question

Consider following C-language program:

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

```
int main() {  
    int x=19, y=23;  
    int j=(x++ , --y);  
    y+=3;  
    printf("%d", j+y);  
    return 0;  
}
```

The value printed by program is ____ ?

$x = \cancel{19} \ 20$

$y = \cancel{23} \ \cancel{22} \ 25$

$j = 22$

47

Happy Learning.!

28 Dec - 3 Jan



no class

