

Q 21. for(i=1; i<=n;)
 i=i*2;
 printf("Pankaj");

~~21. `for (i=1; i<=n; i++)`~~ ~~Same~~ ~~`for (i=1; i<=n; i=i+1)`~~

$$\lfloor \log_2 n \rfloor + 1$$

$$= \left[\begin{matrix} 1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 3 \end{matrix} \right] +$$

Q 22. for(i=1; i<=n; i++)  n
{
 for(j=1; j<=n; j++)  L
 {
 printf("Pankaj");
 break;
 }
}

Q23

$\text{for } (i=1; i \leq n; i++) \rightarrow n$

{

$\text{for } (j=1; j \leq n; j++) \rightarrow L$ (because break.)

{ `printf("Parikar")` ;

`break;`

}

{

$$= \boxed{n} \quad \underline{\text{Ans}}$$

Q 23. void main()

```
{  
    for(i=1; i==1; )  
        printf("GATE ACADEMY");  
}
```

- A. GATE ACADEMY 1 TIME
- B. GATE ACADEMY 2 TIMES
- C. GATE ACADEMY 5 TIMES
- D. INFINITE TIMES GATE ACADEMY

Date _____

① 23)

Void main()

{ for (i=1; i==1;)

printf(" GATE ACADEMY");

}

Always true

②

Infinite loop

Q 24. #include<stdio.h>

```
void main()
{
    int i;
    for(i=1; i=0; i++)
        printf("Pankaj");
    printf("Sharma");
}
```

A. Pankaj Sharma

~~B. Sharma~~

C. PankajPankajSharma

D. Compilation Error

(B) 24-3 #include <stdio.h>

void main()

{ int i;

for (i=1; i=0; i++)

printf("Pankaj");

printf("Sharma");

→ False

} X

(not execute)

(B)

Sharma

Q 25. #include<stdio.h>

```
void main()
{
    int x=011,i;
    for(i=0; i<x; i=i+3 )
    {
        printf("GATE");
        continue;
        printf("ACADEMY");
    }
    return 0;
}
```

A. GATEGATEGATE

- B. GATEACADEMY GATE
- C. INFINITE LOOP
- D. GATE

(A) 25 \Rightarrow #include <stdio.h>

Void main()

{ int n = 0; }

for (i=0; i<x; i = i+3)

{

printf ("GATE");

continue;

printf ("ACADEMY");

return 0;

}

(A)

GATE GATE GATE

Q 26. #include<stdio.h>

```
int main()
{
    int i;
    for(i=1; i++<=5; printf("%d",i));
}
```

OUTPUT:?

~~Q6~~ #include <stdio.h>
int main()
{ int i;
for (i=1; i++ <=5; printf("%d", i));
}

$$\begin{cases} i \leq 5 \\ i = i + 1 \end{cases} \Rightarrow i = 1$$

Output →

~~1 2 3 4 5 6~~

1 $\leq 5 \rightarrow i = 2$
2 $\leq 5 \rightarrow i = 3$
3 $\leq 5 \rightarrow i = 4$
4 $\leq 5 \rightarrow i = 5$
5 $\leq 5 \rightarrow i = 6$

Q 27. a=0;

 for(i=1; i<=n-1; i++)

 {

 for(j=i+1; j<=n-1; j++)

 {

 for(k=1; k<=j; k++)

 {

 a=a+1;

 }

 }

 }

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$a = 0;$

for ($i=1; i \leq n-1; i++$)

{

 for ($j=i+1; j \leq n-1; j++$)

{

 for ($k=1; k \leq j; k++$)

{

$a = a + 1;$

}

~~See 1ⁿ~~

$$\left(\sum_{l=1}^{n-1} \sum_{j=l+1}^{n-1} \sum_{k=1}^{j-1} (1) \right) = \sum_{j=i+1}^{n-1} \sum_{i=j}^{n-1} j$$
$$\sum_{i=1}^{n-1} \sum_{j=i+1}^{n-1} \sum_{k=1}^{j-1} (1) = \sum_{j=i+1}^{n-1} j$$

$\leftarrow i+1 \dots n$

$$= \sum_{k=L}^{n-1} [1 + 2 + \dots + (i+1) + \dots + n]$$
$$= \sum_{i=1}^{n-1} \frac{n(n+1)}{2} - \frac{i(i+1)}{2}$$

$$= \frac{n(n+1)}{2} \times (n-1) - \frac{1}{2} \left[\sum_{i=1}^{n-1} i^2 + \sum_{i=1}^{n-1} i \right]$$

$$= \frac{n(n+1)(n-1)}{2} - \frac{1}{2} \left[\left(\frac{n(n+1)(n-1)}{6} \right)^2 + \frac{n(n+1)}{2} \right]$$

$$= \boxed{\frac{n(n-1)(n+1)}{3}}$$

Teacher's Signature

Q 28. #include<stdio.h>

```
int main()
{
    int i,j,k;
    for(i=0, j=2, k=1; i<=4; i++)
    {
        printf("%d", i+j+k);
    }
}
```

OUTPUT: ??

28) #include <stdio.h>
int main()
{ int i, j, k;
for (i=0, j=2, k=4; i<=4; i++)
printf("%d", i+j+k);
}

Output -

③ $j=0, k=4 \quad i=0; \quad 0 <= 4, \quad 0++ = 1$
 ④ $i=1 \quad 1 <= 4$ ⑦
 ⑤ $k=2$
 ⑥ $i=3$
 ⑦ $i=4 \quad 4 <= 4$ ⑤
 — $i=5 \quad 5 <= 4 \times$

$$\begin{aligned}
 i+j+k &= 0+2+1 = 3 \\
 &\quad (1+2+1 = 4) \\
 &\quad \quad \quad s \\
 &\quad \quad \quad s
 \end{aligned}$$

Output $\rightarrow 34567$

Q 29. #include<stdio.h>

```
int main()
{
    int i=1;
    for(i=0, i=-1; i=1)
```

```
{  
    printf(“%d”, i);  
    if(i==1)  
        break;  
}  
}
```

OUTPUT: ??

29+

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

```
int main ()
```

```
{
```

```
    int i = 1;  
    for (i = 0; i >= -1; i = 1)
```

```
{
```

```
    printf ("%d", i);
```

```
    if (i = 1)
```

```
        break;
```

```
}
```

Output \Rightarrow -1

Q 30. #include<stdio.h>

```
int main()
```

```
{
```

```
int i=0;
```

```
for(++i; ++i; ++i)
```

```
{
```

```
printf(""%d", i);
```

```
if(i==4) break;
```

```
}
```

```
}
```

OUTPUT: ??

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

```
int main()
```

```
{ int i = 0;
```

```
for (++i; ++i; ++i)
```

```
{ printf("%d", i);
```

```
if (i == 4)
```

```
break;
```

```
}
```

Output

\rightarrow

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