



Data Science & Artificial Intelligence

An illustration of two children, a girl and a boy, sitting on a white rocket with red fins and a red nose cone. The rocket is launching upwards, leaving a trail of orange and yellow flames. The children are smiling and holding books.

Python for Data Science

Basics of Python

DPP- 01

Discussion Notes



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[MCQ]

#Q. The output of below python code segment is _____.

a= 5.5

b = 2.0

c= 2

d = -2.0

e= a // b

f= d // c

print(e + f)

$$e = 5.5 // 2.0 \Rightarrow 2.75 \Rightarrow \text{rounded off to lower Integer} = 2$$

$$f = -2.0 // 2 \Rightarrow -1.0$$

$$= 2 + (-1.0) \Rightarrow 1.0$$

A 0

B 0.0

C 1.0

D -1.0

[MCQ]

(Lowest to highest)

#Q. The ascending order Of Precedence of below Operators is _____.

1. not in
2. <<
3. not
4. ^

not , not in , ^ (XOR) , << (Left shift)

3, 1, 4, 2

A 3, 2, 1, 4

B 3, 1, 2, 4

C ✓ 3, 1, 4, 2

D 2, 4, 1, 3

[NAT]

#Q. The result after evaluating the below expression in Python is 5

result = 14 & $\underbrace{4 + 5 << 2}_{9} \wedge \underbrace{19 + 3 // 7 - 3}_{0} >> 4$

//, +, -, <<, >>, &, ^, =

$$3 // 7 = 0$$

$$4 + 5 = 9$$

$$19 + 0 = 19$$

$$19 - 3 = 16$$

$$9 << 2 = 9 * 2^2 = 36$$

$$16 >> 4 \Rightarrow 16 / 2^4 = 1$$

$$14 \& 36 \Rightarrow \begin{array}{l} 14 = 00001110 \\ 36 = 00010100 \end{array}$$

$$\begin{array}{r} 00001110 \\ 00010100 \\ \hline 00000100 = 4 \end{array}$$

$$4 \wedge 1 \Rightarrow \begin{array}{l} 00000100 \\ 00000001 \end{array}$$

$$\begin{array}{r} 00000100 \\ 00000001 \\ \hline 00000101 = 5 \end{array}$$

$$\boxed{\text{result} = 5}$$

[MCQ]

#Q. Match The Following Operators with their associativity.

LIST-I

LIST-II

- | | |
|-------------------------|------------------|
| (A) ** (Exponentiation) | 1. Left To Right |
| (B) & (Bitwise AND) | 2. Right To Left |
| (C) is not (Identity) | |
| (D) = (Assignment) | |

A-2, B-1, C-1, D-2

A

A-1, B-2, C-2, D-1

B

A-2, B-2, C-1, D-1

C

A-2, B-1, C-2, D-2

D

A-2, B-1, C-1, D-2

[NAT]

#Q. The output of below code segment is 210.

$a = 0o63 \Rightarrow$ Octal Integer

$b = a \ll 2$ \ll , operation Performed on Decimal numbers

$c = a \gg 3$ \gg

$\text{print}(b+c)$ # $204 + 6 = \underline{\underline{210}}$

$$(63)_8 \Rightarrow \begin{array}{|c|c|} \hline 6 & 3 \\ \hline \end{array}$$

$$3 \times 8^0 + 6 \times 8^1$$

$$= 3 + 48$$

$$= 51$$

$$b = 51 \ll 2 = 51 * 2^2 = 51 * 4 = 204$$

$$c = 51 \gg 3 = 51 / 2^3 = 51 / 8 = 6$$

[MCQ]

#Q. What will be printed by below Python Code?

```
i = 0xAE1
j = i & 152
k = j | 100
print(k)
```

i = 0xAE1 ~~Hexa~~ Decimal value

&, | Performed on Decimal values

$$\begin{aligned}
 (AE1)_{16} &= \begin{array}{|c|c|c|} \hline A & E & 1 \\ \hline \end{array} \\
 &= 1 \times 16^0 + E \times 16^1 + A \times 16^2 \\
 &= 1 + 14 \times 16 + 10 \times 256 \\
 &= 1 + 224 + 2560 \\
 &= 2785
 \end{aligned}$$

$$\begin{aligned}
 0000101011100001 &= 2785 \\
 0000000010011000 &= 152 \\
 0000000010000000 &= 128 \\
 0000000001100100 &= 100 \\
 0000000011100100 &= 228
 \end{aligned}$$

A 344

B 0o344

C 0xe4

D ✓ 228

$$\begin{array}{r}
 2 \overline{) 2785} \\
 \underline{1392} - 1 \\
 2 \overline{) 1392} \\
 \underline{696} - 0 \\
 2 \overline{) 696} \\
 \underline{348} - 0 \\
 2 \overline{) 348} \\
 \underline{174} - 0 \\
 2 \overline{) 174} \\
 \underline{87} - 0 \\
 2 \overline{) 87} \\
 \underline{43} - 1 \\
 2 \overline{) 43} \\
 \underline{21} - 1 \\
 2 \overline{) 21} \\
 \underline{10} - 1 \\
 2 \overline{) 10} \\
 \underline{5} - 0 \\
 2 \overline{) 5} \\
 \underline{2} - 1 \\
 2 \overline{) 2} \\
 \underline{1} - 0
 \end{array}$$

[MSQ]

Ans: A, D

#Q. What will be the value of result in the below code?

$$x = 0b(01010110)_2 = 86$$

$$y = 0x123 = 291$$

$$z = 42 = 42$$

$$\text{result} = x + y - z$$

$$291 + 86 - 42$$

$$377 - 42 = (335)_{10}$$

A ✓ 517 in octal

B ✗ 517 in decimal

C ✗ 1f4 in hexa decimal

D ✓ 335 in in decimal

$$\begin{array}{r} 291 \\ + 86 \\ \hline 377 \\ - 42 \\ \hline 335 \end{array}$$

335 in octal

$$\begin{array}{r} 8 \overline{) 335} \\ 8 \overline{) 41} - 7 \\ \hline 5 - 1 \end{array}$$

$$= (517)_8$$

335 in Hexa

$$\begin{array}{r} 16 \overline{) 335} \\ 16 \overline{) 20} - F \\ \hline 1 - 4 \end{array}$$

$$(14f)_{16}$$

2	1	0
1	2	3

$$3 \times 16^0 + 2 \times 16^1 + 1 \times 16^2$$

$$= 3 + 32 + 256$$

$$= 291$$

[MCQ]

#Q. What will be the value of k in the below code?

```
i = -13.5
```

```
j = 5
```

```
k = i % j
```

```
print(k)
```

-13.5 / 5

a / b when a, b signs are different == b - (a / b)
== 5 - (13.5 / 5)
== 5 - 3.5 = 1.5

A

0.0

B ✓

1.5

C

3.5

D

-1.5



THANK - YOU