

- * History
- * Languages
- * Compiled / Interpreted
- * Compilation \rightarrow .c \rightarrow obj \rightarrow .exe
- * runners / lib \rightarrow gcc / mingw
- * Softwares / HW / Architecture
- * Data Types \rightarrow C
- * Format Specifiers %d, %f, %c
(%d or %.n) numbers %s
integer

$$\text{float } f = \underline{\underline{20.5}}; \quad [a - A = 32]$$

o/p \rightarrow 20.500000

ASCII values: $A = 65 \quad a = 97$
Table $[a \text{ is ahead of } A \text{ by 32 units}]$

$$A = 65 \quad a = 97$$

$$B = 66 \quad b = 98$$

Convert Ic to uc \rightarrow $a \rightarrow A$
Operators: $a + b = c ;$ \rightarrow $a - 32$

Variables \leftarrow operator \rightarrow Terminating Semicolon

expression

- * Arithmetic Operators: +, -, /, *, %
 - * Assignment Operators: =, +=, -=, /=, *=, %=
 - * Logical Operators: &&, ||, !
 - * Relational / Comparison Operators: >, <, >=, <=, ==, !=
- Boolean: T | F

Unary Operators: \rightarrow \sim , $\sim\sim$ (Prefix or Postfix)

Ternary Operator \rightarrow Short-hand if else

Conditional Operator \rightarrow $(\text{Condition}) ? \text{trueValue} : \text{falseValue};$

Cond? tv : fv;

Bitwise Operators: \rightarrow

Bitwise AND	\rightarrow	&	Key word Symbol
OR	\rightarrow		Amperand
XOR	\rightarrow	\wedge	Pipe
Right Shift	\rightarrow	\gg	Caret
Left Shift	\rightarrow	\ll	Angular braces
NOT	\rightarrow	\sim	Tilde or Negation

MCQ: ~ 5

a) 10 (T)
b) 3
c) 2
d) -6 (P)

General Formula: Bitwise NOT ($\sim v$)

$$\sim n = -n - 1$$

$$\sim 5 = -5 - 1 = -6$$

$$\sim (-10) = -(-10) - 1 = 10 - 1 = 9$$

Power of 2 (Use Bitwise) (Hamming Weight)

$$4 = 2^2$$

$$3 = \frac{0100}{0011}$$

$$9 = \frac{1001}{1000}$$

$$1 = \frac{0000}{0001}$$

$$16 = 2^4$$

$$15 = \frac{10000}{0111}$$

$$7 = \frac{0111}{0110}$$

$$3 = \frac{0011}{0010}$$

$$8 = \frac{1000}{0000}$$

$$10 = \frac{1000}{0001}$$

$$18 = \frac{10010}{00011}$$

$$21 = \frac{10101}{00010}$$

$$23 = \frac{10110}{00011}$$

$$25 = \frac{10111}{00010}$$

$$27 = \frac{10111}{00011}$$

$$29 = \frac{10111}{00010}$$

$$31 = \frac{10111}{00011}$$

$$33 = \frac{10111}{00010}$$

$$35 = \frac{10111}{00011}$$

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$$63 = \frac{10111}{00011}$$

$$65 = \frac{10111}{00010}$$

$$67 = \frac{10111}{00011}$$

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$$103 = \frac{10111}{00011}$$

$$105 = \frac{10111}{00010}$$

$$107 = \frac{10111}{00011}$$

$$109 = \frac{10111}{00010}$$

$$111 = \frac{10111}{00011}$$

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$$115 = \frac{10111}{00011}$$

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$$201 = \frac{10111}{00010}$$

$$203 = \frac{10111}{00011}$$

$$205 = \frac{10111}{00010}$$

$$207 = \frac{10111}{00011}$$

$$209 = \frac{10111}{00010}$$