**Q1: What is null statement and a compound statement? What is the alternate name of the compound statement?**  
  
Answer: The simplest statement is null statement or empty statement. It is represented as just semicolon (;).   
  
*e.g. ; // null statement*  
  
A compound statement is a sequence of statements enclosed by pair of braces ({}). Alternate name of the compound statement is block.  
  
**Q2: What is the significance of a null statement?**  
Answer: A null statement is useful where the language requires a statement but the program's logic does not. 

e.g. a program keeps on reading a value till it encounters a particular value or end-of-file.

while (cin >> val && val != required\_vale)

            ;

**Q3: What are the three constructs that govern statement flow?**  
  
Answer: sequence, selection and iteration  
  
**Q4: What is the significance of a test-condition in a loop?**  
Answer: The test-condition in a loop decides whether the loop-body will be executed or not based on the truth value. If the test-condition evaluates to true i.e., 1, the loop-body will execute, otherwise the loop is terminated.

**Q5: What is a selection statement? Which selection statement does C++ provides?**  
  
Answer: The selection statement conditionally executes another statement (or block of statements) based on whether a specified expression is true. C++ provides two types of selection statements: if and switch.  
  
**Q6: Can a conditional operator replace an if statement always?**  
Answer: No in conditional operator usually replaces if statement but not always.  
  
**Q7: Correct the following code fragment:**

if (x=1)

k=100;

else

k=1O;

Answer: it should be if (x == 1)  
  
**Q8: What will be the output of the following code fragment?**

cin >> a;

if (a=5)

cout << "Five";

else

cout << "Not Five";

if the input given is (1)7 (ii)5?

Answer: (Note: Please see if (a=5) assigns 5 to a. An assignment operator is used instead of equality operator. That's why if (condition) is always true.)  
  
 (1) Five  
  
 (2) Five  
  
**Q9: What will be the output of the following code fragment?**

int year;

cin >> year;

if (year%100 == 0)

if(year%400 == 0)

cout << "LEAP";

else

cout << "Not century year";

if the input given is (i)2000 (ii)1900 (iii) 1971?

Answer:  
  
          (i) LEAP  
  
          (ii) Not century year  
            
          (iii) No output  
  
**Q10: What will be the output of the following code fragment?**

int year;

cin >> year;

if (year%100 == 0)

{

if(year%400 == 0)

cout << "LEAP";

}

else

cout << "Not century year";

if the input given is (i)2000 (11)1900 (iii) 1971?

Answer: (i) LEAP  
  
              (ii) No output  
  
             (iii) Not century year

**Q1: Storage of 1KB means the following number of bytes:**

(a) 1000  
(b) 964  
(c) 1024  
(d) 1064

Answer: (c) 1024 bytes

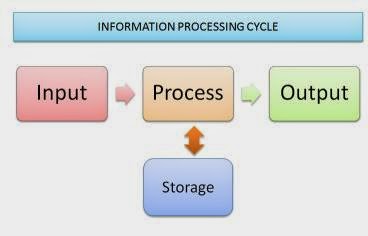
**Q2: One Megabyte is equivalent to**

(a) 210 bytes  
(b) 220 bytes  
(c) 230bytes  
(d) none of these

Answer: (b) 220 bytes (1 MB = 1024 KB = 210 KB =  210× 210 bytes = 220 bytes)

**Q3:What do you understand by IPO cycle?**

Answer: It stands of Input-Process-Output cycle. A computer follows IPO cycle i.e. it takes data as input, processes it and takes out information as an output.

[](http://1.bp.blogspot.com/-QgQeUWi-sKs/U27d_b29zAI/AAAAAAAAG0M/cbTEUpa1Jnw/s1600/cl11_ipo_cycle.jpg)

**Q4: What are the functional components of a digital computer?**

Answer: The functional components of a digital computer are:

* Input Unit
* Central Processing Unit (CPU) consisting of ALU (Arithmetic Logic Unit) and CU (Control Unit)
* Output Unit
* Storage (Memory)

**Q5: What are the components of CPU? What is its role? What is the function of control unit of CPU?**

Answer: The CPU is the brain of the computer system. It has three main components:

* Arithmetic and Logic Unit (ALU)
* Control Unit
* Registers

The arithmetic and logic unit (ALU) is the part of CPU where actual computations (arithmetic or logical) take place. The control unit directs and controls the activities of the computer system. While performing these operations the ALU takes data from the temporary storage area inside the CPU named registers.

**Q6: What is the highest memory unit known so far?**

Answer: Geop Byte

**Q7: What role does input play in a computer?**

Answer: Roles an input unit plays in a computer are:

1. acts as an interface between user and the CPU
2. accepts data and instructions to feed into CPU
3. examples are keyboard, mouse, light pen, touch screen etc.

**Q8: What role does the output play in a computer?**

Answer: Computers talks to the outer world (humans) via output devices. Output unit takes machine  
coded output results from the processor and converts them into a form that can be used by human beings.

**Chapter Arrays ( Class 11 Sumita Arora Solutions )**

The solutions of sumita arora for class eleven of chapter arrays are given below :-

**TYPE A : VERY SHORT ANSWER QUESTIONS**

|  |
| --- |
| **Q1. What do you understand by an array? What is the significance of array?** |
| An array is a collection of variables of the same type that are referenced by a common name. Arrays are very useful in a case where quite many elements of the same types to be stored and processed. |
| **Q2. What is meant by index of an element? How are indices numbered in C++?** |
| The element’s number is referred to as an index. An array index in C++ starts with number 0 not 1. That is, array A[5] will be having elements: A[0], A[1], A[2], A[3], A[4]. |
| **Q3. Determine the total bytes required to store B[17], a char array.** |
| As B[17] is a character array, the size of each element is 1 byte. The total bytes required to store B[17] is: 1 x 17 = 17 |
| **Q4. What is the data type of element of an array called?** |
| The data type of array elements is known as the base type of the array. |
| **Q5. How is one-dimensional array represented in memory?** |
| The elements of an one-dimensional array are stored in contiguous memory location in their index order. For example, an array *grade*of type *char*with 8 elements declared as char grade[8]; will have the element grade[0] at the first allocated memory location, grade[1] at the next contiguous memory location, grade[2] at the next, and so forth. |
| **Q6. Determine the number of bytes required to store an int array A[23], if the int size is 4 bytes.** |
| The size of int is 4 bytes and there are 23 elements in array. So the number of bytes required to store an int array is: 4 x 23 = 92. |
| **Q7. An array element is accessed using (a) a first-in-first-out approach (b) the dot operator (c) an element name (d) an index number** |
| (d) an index number |
| **Q8. Write a statement that defines a one-dimensional array called amount of type double that holds two elements.** |
| double amount[2]; |
| **Q9. The elements of a twenty-element array are numbered from \_\_\_\_\_\_ to \_\_\_\_\_\_.** |
| 0 to 19. |
| **Q10. Write a statement that takes element k of array amount and writes it to cout<< with the insertion operator.** |
| cout<<amount[k]; |
| **Q11. Element amount[9] is which element of the array? (a) the eighth (b) the ninth (c) the tenth (d) impossible to tell.** |
| (c) the tenth |
| **Q12. Write a statement that defines a char array to store coins’ types and initializes it to the values 10-paise, 25-paise, 50-paise, 1-rupee, 2-rupee, 5-rupee, 100-rupee.** |
| char coins[7][15] = { "10-paise", "25-paise", "50-paise", "1-rupee", "2-rupee", "5-rupee", "100-rupee" }; |
| **Q13. How does C++ view a string as? Which character marks the end of a string?** |
| C++ views a string as single-dimensional character array. The null character ’\0’ marks the end of a string. |
| **Q14. Write a statement that defines a string variable school to hold a string of up to 25 characters.** |
| char school[26]; |
| **Q15. Write a statement that defines a string constant, called dextrose, that has the value “C6H1206-H20”.** |
| char dextrose[20] = { “C6H1206-H20 “ } |
| **Q16. Declare following arrays: (i) figures of 30 char (ii) check of 100 short (iii) balance of 26 float (iv) budget of 58 double** |
| (i) char figures[30]; (ii) short check[100]; (iii) float balance[26];  (iv) double budget[58];       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | **Q17. Declare an array of 5 ints and initialize it to the first five even numbers.** | | int A[5] = { 2, 4, 6, 8, 10 }; | | **Q18.Write a statement that assign the sum of the first, second and last elements of the array n question 17 to the variable threesum.** | | threesum=(A[0] + A[2] + A[4]); | | **Q19. Write a statement that displays the value of the second element in the long array balance.** | | cout<<A[1]; | | **Q20. Declare an array of char and initialize it to the string “Pizzas”.** | | char string[10] = "Pizzas"; | | **Q21.For a multidimensional array X[5][24], find the number of bytes required.** | | No. rows = 5, No. of columns = 24, Size of each elements = 2 bytes. Total bytes = number-of-rows x number-of-columns x size of (base type) = 5 x 24 x 2 =240 bytes. | | **Q22. For the same array mentioned in question 21, find the total number of elements in X.** | | Total elements = number-of-rows x number-of-columns = 5 x 24 = 120 | | **Q23. For a multidimensional array B[9][15] find the total number of elements in B.** | | No. rows = 9, No. of columns = 15, Size of each elements = 2 bytes. Total bytes = number-of-rows x number-of-columns = 9 x 15 =135 | | | |