

C++ theory

- 1) Which of the logical operator means "not equal to"? **!=**
- 2) (Removed) A is a variable that holds a as its value. **pointer / memory address**
- 3) What is array? **It stores a collection of elements of the same type**
- 4) Which of the following is not a variable type in C++? **Real**
- 5) What is the size of double in bytes? **8 bytes**
- 6) Variables which are defined outside of all functions are called _____ and can be accessed from anywhere: **global variables**
- 7) What is false about arrays? **Array has no order of elements**
- 8) What is false about variable name? **Can start with digits**
- 9) What structure works similar to switch structure? **If / else (nested if/else)**
- 10) What is the size of float in bytes? **4 bytes**
- 11) What is FALSE about passing argument by reference? **arguments passed by reference can be literals or expressions**
- 12) What is return type of a function? **is the type of the value returned by the function**
- 13) What is function body? **it is a block of statements surrounded by braces { } that specify what the function actually does**
- 14) What is FALSE about memory allocation: **With the dynamic memory allocation the memory is taken from limited stack memory**
- 15) What is FALSE about functions: **Writing whole code in one place, without dividing**
- 16) Consider we defined a pointer to function: `typedef int (*operation)(int, int);` and how I can rewrite the line: `int add(int x, int y, int (*funPtr)(int, int));` **int add(int x, int y, operation funPtr);**
- 17) Choose the FALSE statement about dynamic memory allocation: **Dynamically allocated memory is freed automatically when some block or function is exited.**
- 18) How operators &(address-of) and *(dereference operator) are related to each other? **They are inverse of each other**
- 19) How the part of memory is called, which is given when you create variables or arrays dynamically? **heap**
- 20) What is size of a given array: `char s[] = "hello";` **6**
- 21) `int x = 5; int *ptr = &x;` What will show the following code: `cout << ptr << " " << *ptr << " " << &x;` and if address of x is A04B88D0. **b. A04B88D0 5 A04B88D0**

`int x = 5; int *ptr = &x;` What will show the following code: `cout << ptr << " " << *&ptr << " " << *&ptr;` and if address of x is A04B88D0. **b. A04B88D0 A04B88D0 A04B88D0**

`int x = 5; int *ptr = &x;` What will show the following code: `cout << &ptr << " " << *ptr << " " << &x;` and if address of x is A04B88D0. **there is no correct answer**
- 22) What is the value of array 'str', if you read with: `cin >> str;` and user inputs "hello guys" **Hello**
- 23) Which class is used to deal with output streams. **ostream**
- 24) Which class is used to deal with input streams. **istream**
- 25) The smallest addressable unit of memory is**byte**
- 26) What is the difference between '=' and '==' signs? '=' **is assignment operator and '==' is equality operator**
- 27) A single-line comment in C++ can begin with ____ **answer ://**
- 28) Describe `std::cout`. **Standard output stream to computer screen usually**

29) What is the correct definition of an array? **An array is a series of elements of the same type in contiguous memory locations**

30) What will cause an error from below?

a. **There is no correct answer**

b. `int a[4] = {1, 2, 3, 4};`

c. `int x[12];`

d. `char a[] = {'a', 'r', 't'};`

e. `char a[] = "hello";`

31) The programmer wrote Bubble sort code:

```
#include <iostream>
int main()
{
    const int size=11;
    char word [size]="programmer";
    for (int i=0;i<size-1;i++){
        for(int j=0;j<size-1;j++){
            if(word[j]>word[j+1]){
                char temp=word[j];
                word[j]=word[j+1];
                word[j+1]=temp;
            }
        }
    }

    std::cout<<word;
    return 0;
}
```

To sort string. What is the output of this code and why?

It is sorted in alphabetic order.

The code will not produce any output since Null terminator is sorted to be first.

32) Programmer wrote following code

```
#include <iostream>
int main () {
    char word[]="hello";
    char word2[6]={'h','e','l','l','o'};
    if (word == word2) {
        std::cout<<"Two words are the same"<< std::endl;
    }
    else{
        std::cout<<"Two words are different"<< std::endl;
    }
}
```

what is the output of this code and why?

answer:Two words are different

because he is comparing memory addresses where arrays are stored and not arrays. use strcmp() function to compare strings

33) What is the wrong way to create an array?**`int n = 5; int arr[n];`**

34) are used to hold output for a particular data consumer, such as a monitor, a file, or a printer.
output stream

35) What is the index number of the last element of an array with 9 elements? **8**

36) What is false about comments in programming? **Used to give values for variables**

- 37) . What is the range of signed 1 byte? (1 byte is 8 bits) **From -128 to 127**
- 38) Arrays must be explicitly declared providing a _____ size : **constant**
- 39) In which structure first statements are executed and only then it checks the condition? **do while**
- 40) How underlined part of a code is called: void printArray(inta[], intn){.....} **function name**
- 41) Which of the following declarations is valid? **int longInt;**
- 42) Which of the following accesses the seventh member in array? **array[6];**
- 43) What is function name? **is the identifier by which the function can be called**
- 44) Which class is used to deal with input streams. **istream**
- 45) What is the correct syntax to declare a pointer? **. type *pointer_name;**
- 46) Which data type requires the least amount of memory? **bool**
- 47) There is no difference between below two statements: int a = 10; int a(10); **true**
- 48) If a collection of variables is array, then a collection of arrays is **two-dimensional array**
- 49) The following line of code is an example of what? (More than one choice could be correct) n = 113;
assignment, initialisation
- 50) In order to use "strlen" which library you need to include? **cstring**
- 51) How do you insert comments in C++ code? **// This is a comment, /* This is a comment */ , /**
This is a comment**
- 52) Which operator can be used to COMPARE two values? **==, !=**
- 53) What you need to always do after finishing working with dynamic array? **Deallocate array
(delete from memory)**
- 54) What is the size of char in bytes? **1**
- 55) What is array? **it stores a collection of elements of the same type**
- 56) How underlined part of a code is called: int getMax(inta, intb) {.....} **return type**
- 57) What is the size of double in bytes? **8**
- 58) What is function overloading? **multiple functions with the same name but with different
parameter lists**
- 59) What operator allows us to see what memory address is assigned to a variable? **&**
- 60) What is the correct syntax to declare a pointer? **type *pointer_name**
- 61) How underlined part of a code is called: void printArray(inta[], intn){.....} **-return type**
- 62) **Output stream** are used to hold output for a particular data consumer, such as a monitor, a file, or a printer
- 63) What is the return type of function that doesn't return any value **void**
- 64) What is the size of a pointer in 32-bit system **4 bytes**
- 65) The smallest addressable unit of memory is **byte**
- 66) To overload a function what conditions must be followed **Functions must have different
parameters(different types or quantity)**
- 67) Show right syntax of functions **return_type function_name(parameters){...}**
- 68) What is the value of null pointer? **It has no value, it is not pointing to anything/**
- 69) What is false about comments in programming **used to give values for variables**
- 70) What is the size of char in bytes **1**
- 71) What is false about variable ? **Can store many values**
- 72) Choose the correct syntax for creating variable dynamically **int *a ????????????????????**
- 73) What does the "continue" do inside of a loop? **Skips the remainder of loop body and starts the
next iteration**
- 74) What is the size of an array - int n[]={3, 5, 6, 3, 7}; **5**
- 75) A **null terminator** is a special character ('\0', ascii code 0) used to indicate the end of the string

- 76) What is algorithm? **Actions and their order**
- 77) What is FALSE about passing argument by value? **allows to change the value of passed variable**
- 78) What statement is FALSE about pointers to function? **You can not assign another address to function pointers**
- 79) What is definition of loops? **Statements executed while some condition is true**
- 80) What does the following statement mean? `int(*fp)(char*)` **pointer to function taking a char* argument and returns an int**
- 81) How to create a pointer to pointer? **`int**ptr;`**
- 82) Which of the following strings is an **invalid** variable name? **2R2D**
- 83) Which condition is true if `x=1` and `y=0`; **`if(x%2==1 || y>=1)`**
- 84) What is NOT an advantage of using functions? **high speed of execution (not sure)**
- 85) How underlined part of a code is called: `int getMax(int a, int b) {.....}` **parameter**
- 86) A variable is, when pointer is **direct reference / indirect reference**
- 87) A is a variable that holds a as its value. **= pointer / memory address**
- 88) The lowest programming language from below. **Machine language**
- 89) What is the size of integer in bytes? **4 bytes**
- 90) In which namespace operators `cin` and `cout` located **std**
- 91) What is false about comments in programming? **Used to give values for variables**
- 92) are used to hold input from a data producer, such as a keyboard, a file, or a network. **e. input stream**
- 93) What library you should include to use `cin` and `cout`? **c. `iostream`**
- 94) Which of the following strings is a correct floating-point number (in the "C" language sense)? **c. 3.1415E92**
- 95) If 'x' is a variable name, how to assign its address to a pointer 'ptr'? **a. `ptr = &x;`**
- 96) You have array: `int b[2][3] = {{1,2,6}, {3,4,1}}` what will be the output of: `cout << b[0][0];` **e. 1**
- 97) What operator allows us to get the value at a particular address? *****
- 98) Each statement or expression is ended with... **Semicolon**
- 99) Choose the correct syntax for creating array dynamically: **`int *a = new int [n];`**
- 100) What does the "break" do inside of a loop? **stops the loop and exits from it**
- 101) What is the definition of function?
A function is a reusable sequence of statements designed to do a particular job
- 102) Consider you have function: `int plusOne(int x){return x+1};` and `*ptr` is pointer to your function using pointer: **`ptr(5)`**
- 103) What is true about float and double? **float has 6-9 digits and double has 15-18 digits of precision**
- 104) Describe `std::cin` **Standard input stream from keyboard usually**
- 105) What does the "continue" do inside of a loop? **Skips the remainder of loop body and starts the next iteration**
- 106) are used to hold output for a particular data consumer, such as a monitor, a file, or a printer. **output stream**
- 107) What will be produced by executing the following part of the code?
`char name[] = {'H','e','l','l','o'};`
`cout << name;` **We cannot tell clearly as we may get some garbage in the output**
- 108) Show the correct syntax of declaring a pointer to the function that has no parameters and returns real number: **a. `double (*funPtr)();`**

109) What is the value of array 'str', if you read with: cin>>str; and user inputs "hello guys" -
hello

110) What is a program(application)

It is a set of instructions that tells the computer what to do

111) How in C++ logical OR is written ? **||**

112) How in C++ logical NOT is written? **!**

113) what program takes the WHOLE source code and converts it to machine code?
compiler

114) Function that returns the length of array: **strlen**

115) A single-line comment in C++ can begin with **__** **//**

116) What expression is TRUE if 'arr' is an array name? ***arr=&arr[0]/ arr=&arr[0]/ &arr=*arr**

117) Which of the following is illegal : **int i; double* dp = &i;**

118) A is an expression that tells the CPU to interrupt the current function and execute another one - **function call**

119) What is the size of short in bytes? **2 bytes**

120) Which condition is true if x = 10 and y = -2 **if(x>=10 || y%2==1)**

121) All variables must be **declared** before the can be used

122) Values of type **char** are used to hold values defined by the ASCII character set

123) What is the size of a pointer in 32-bit system? - **4 bytes**

124) How many times loop "for(int i=0; i < x; i *= 2)" is executed if x = 100 initially **There is no correct answer**

125) . If "stp" is a pointer to array of objects of Student class, then which one is WRONG way to access to Student's members? **(stp+i).id**

126) What is the correct syntax to declare a pointer? **type *pointer_name;**

127) What operator you use to allocate memory dynamically? **new**

128) What will cause an error from below? **= int a[];**

129) Which condition is true if x = 1 and y = 0 **if(x%2==1 || y>=1)**

130) What is FALSE from below?. **Variables declared outside of a function are local variables**

131) How underlined part of a code is called: int getMax(int a, int b){if(a>b) return a; else return b;}
returning value

132) A(n) **variable** is a named location in memory that is used to hold a value that may be modified by the program

133) Choose the high level programming language from below: **C++**

134) What is parameter of a function : **allows passing arguments to the function from the location where it is called.**

135) Which of the following operators can be used only with integer operands **%**

136) How underlined part of a code is called: int getMax(inta, intb){.....} **Function name**

137)

138) What will cause an error from below?

A. **There is no correct answer**

B. **int a[5] = {13, 32, 43, 54, 25};**

C. **int a[] = {14, 2, 36, 32, 43};**

D. int a[3] = {0, 1, 2, 3};

E. **int a[2];**

139) Which of the following is illegal? `int i; double* dp = &i;`

140) Which of the following operators can be used only with integer operands? `%`

141) What is the range of unsigned 1 byte? (1 byte is 8 bits) `From 0 to 255`

142) There is no difference between below two statements: `int a = 10; int a(10);` `True`