

Instructions: This is a closed book, closed note, and closed computer test. Please write your answer (A, B, C, or D) clearly in the Answer column. Please ensure your name is written above. Turn in your test when you are completed.

Problem	Question	Choices	Answer
1	What array would best represent a chess board?	a) int chess[64]; b) bool chess[8][8]; c) int chess[8][8]; d) int chess[8][8][8];	C
2	What is wrong with this code that is supposed to print out a table that has 20 rows and 30 columns: <pre> for (int row=0; row<20; row++) { for (int col=0; col<30; col++) { cout << table[col][row] << " : "; } cout << endl; } </pre>	a) Multi-Dimensional Arrays should have the same number of rows and columns. b) The Loops should start at 1. c) When displaying each element, the row index should be specified first. d) The first loop should always be columns instead of rows.	C
3	What array would best represent a picture that was 20 pixels by 20 pixels where each pixel can be one of 10 colors?	a) int picture[20][20]; b) bool picture[20][20]; c) int picture[20]; d) bool picture[20];	A
4	To read in a Sudoku board from an input file stream called fileIn, what condition should be put in the while loop?	a) fileIn >> sudoku b) fileIn >> sudoku[row] >> sudoku[col] c) fileIn >> sudoku[row][col] d) fileIn >> *sudoku	C
5	Which of the following functions properly receives a table of integers with 5 rows and 10 columns?	a) void process(int table[5][10], int size) b) void process(int table[10][5]) c) void process(int table[][10], int size) d) void process(int table[][], int size)	C
6	How do I access the last element in a multiple-dimensional array with 8 rows and 12 columns?	a) table[8][12] b) table[12][8] c) table[11][7] d) table[7][11]	D
7	What is the best loop to populate a multi-dimensional array from a file?	a) While Loop b) Do While Loop c) Single For Loop d) Two For Loop's	A

Problem	Question	Choices	Answer
8	What is the best loop to populate a file from a multi-dimensional array?	a) While Loop b) Do While Loop c) Single For Loop d) Two For Loop's	D
9	What is the output of this code: <pre>int data[3][3] = {{1, 2, 3}, {2, 4, 6}, {3, 6, 9}}; for (int row=0; row<3; row++) { if (row != 0) { cout << "(-----)" << endl; } for (int col=0; col<3; col++) { cout << data[row][col] << " "; } cout << endl; }</pre>	a) 1 2 3 (-----) 2 4 6 (-----) 3 6 9 b) (-----) 1 2 3 (-----) 2 4 6 (-----) 3 6 9 (-----) c) 1 2 3 (-----) 2 4 6 (-----) 3 6 9 (-----) d) 1 2 3 (-----) 2 4 6 (-----) 3 6 9	A
10	If an integer takes 4 bytes in memory, how much memory does the following multi-dimensional array used: <pre>int data[3][4];</pre>	a) 12 bytes b) 28 bytes c) 48 bytes d) 96 bytes	C

Problem	Question	Choices	Answer
11	<p>If the following function was defined</p> <pre>void displayBoard(int board[][9], int size) { ... }</pre> <p>how would main call this function:</p> <pre>int main() { int myBoard[9][9]; displayBoard(???) return 0; }</pre>	<p>a) displayBoard(int myBoard[9][9]); b) displayBoard(myBoard, 9); c) displayBoard(myBoard[][9], 9); d) displayBoard(int myBoard[][9]);</p>	B
12	<p>What is the output of the following code:</p> <pre>int data[3][3] = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}}; for (int i=0; i<3; i++) { cout << data[i][i] << " "; }</pre>	<p>a) 1 2 3 b) 1 4 7 c) 1 5 9 d) 7 5 3</p>	C
13	<p>How would you dynamically allocate space for text that can store a word with a maximum size of 10 characters (ex: watermelon)?</p>	<p>a) char *word = new char[10]; b) char word = new char[10]; c) char word = new char[11]; d) char *word = new char[11];</p>	D
14	<p>What will the pointer text be equal to in this code:</p> <pre>int size = -2; char *text = new (nothrow) char[size];</pre>	<p>a) Always 0 (or NULL) b) Some random address c) Always -2 d) No value due to a segmentation fault</p>	A
15	<p>When you dynamically create a variable with the new keyword, where is the memory allocated?</p>	<p>a) heap b) stack c) pile d) dump</p>	A
16	<p>When the software no longer needs data that was dynamically allocated, what keyword should be used to de-allocate the memory?</p>	<p>a) destroy b) delete c) undo d) return</p>	B

Problem	Question	Choices	Answer
17	How would you dynamically allocate an array of 20 integers?	a) <code>int *list = new int[20];</code> b) <code>int *list = new int[21];</code> c) <code>char *list = new int[20];</code> d) <code>char *list = new int[21];</code>	A
18	Which of the following is <u>not</u> a valid way to create an array of 10 integers?	a) <code>int x[10];</code> b) <code>int x[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};</code> c) <code>int *x = new int[10];</code> d) <code>int *x = new int[];</code>	D
19	Which of the following is <u>not</u> true about the string class?	a) You can compare strings using the <code>==</code> operator. b) You can combine two strings using the <code>+</code> operator. c) You have to specify the length of the string when you declare it. d) You can use <code>cout</code> and <code>cin</code> with strings.	C
20	How do you read text with embedded spaces from the keyboard into a string variable called "sentence".	a) <code>cin.getline(sentence,256);</code> b) <code>cin.getline(cin, sentence);</code> c) <code>getline(cin, sentence);</code> d) <code>getline(cin, sentence, 256);</code>	C
21	What is the output of the following code: <pre>string color = "Red"; string flower = "Rose"; cout << (color + flower);</pre>	a) Red Rose b) RedRose c) Red+Rose d) Compiler Error	B
22	What is the output of the following code: <pre>string word1 = "apple"; string word2 = "car"; if (word1 > word2) { cout << word2; } else { cout << word1; }</pre>	a) apple b) car c) No output d) Compiler Error	A
23	How would you convert the following to use strings? <pre>char story[256][32];</pre>	a) <code>string story[256][32];</code> b) <code>string story[256];</code> c) <code>string story[32];</code> d) <code>string story;</code>	B

Problem	Question	Choices	Answer
24	Which of the following function declarations properly receives an array of strings?	a) void analyze(string list[10]) b) void analyze(string list[]) c) void analyze(string list[], int num) d) void analyze(string list[10], int num)	C
25	Which operator can be used to determine if two strings are not equal to each other?	a) != b) <> c) ~ d) There is no operator	A
26	Which of the following is <u>not</u> a valid way to declare the main function in C++ code?	a) int main() b) int main(int argc, char **argv) c) int main(char **argv, int argc) d) int main(int argc, char *argv[])	C
27	What will be the value of int argc if the program a.out was executed from the command line as follows: a.out cat cow bird	a) 2 b) 3 c) 4 d) 5	C
28	If argv contains the parameters passed into the program, which of the following will give the value of "car" if the program a.out was executed from the command line as follows: a.out truck car boat	a) argv[0] b) argv[1] c) argv[2] d) argv[3]	C
29	Which of the following statements about command line parameters is <u>not</u> true?	a) Parameters are provided to the main function only as character arrays. b) Parameters received from the command line are each separated by one or more spaces c) C++ only supports up to 10 parameters. d) The program name is considered the first parameter.	C
30	Which of the following is <u>not</u> true about proper instrumentation?	a) Instrumentation can be used to analyze the performance of a function. b) Instrumentation requires adding code to your function to capture data. c) Instrumentation should have minimal impact to the function. d) Instrumentation should modify the behavior of the original function.	D