



BRIDGING EXEMPTION TEST SEMESTER I, SESSION 2021/2022

COURSE CODE	:	BSPT 0024
COURSE	:	FUNDAMENTALS OF PROGRAMMING
PROGRAMME	:	BRIDGING PROGRAMME
DURATION	:	2 HOURS
DATE	:	-

INSTRUCTION TO CANDIDATES:

1. ANSWER ALL QUESTIONS.

WARNING!

Students caught copying/cheating during the examination will be liable for disciplinary actions and SPACE may recommend the student to be expelled from the study.

This examination question consists of (X) printed pages only including this page.

PART A: MULTIPLE CHOICE QUESTIONS**[45 MARK – 1.5 per each]**

1. **cin** is standard input stream. What is the function of **cin**?
 - A. Display output to the screen
 - B. Read the input from keyboard
 - C. Delete output on the screen
 - D. Print the output to the printer

2. **cout** is standard output stream. What is the function of **cout**?
 - A. Display output to the screen
 - B. Read the input from keyboard
 - C. Delete output on the screen
 - D. Print the output to the printer

3. Identify the **CORRECT** C++ statement?
 - A. `cout<< "\nPlaying"<<endl;`
 - B. `cout<< "Playing";<< "Netball"<<endl;`
 - C. `cout<< "Playing\n",endl;`
 - D. `cout>> "Playing";`

4. Syntax to exit a **switch** statement
 - A. `endl`
 - B. `return`
 - C. `break`
 - D. `default`

5. Select suitable logical expressions to generate **true** value.
 - A. `!true && true`
 - B. `false || !false`
 - C. `false && true`
 - D. `false || !true`

6. What is the output of the following program segment?

1	<code>bool i = false;</code>
2	<code>cout << i + 4;</code>

- A. 0
- B. 1
- C. 4
- D. 5

7. Which loop is guaranteed to execute at least one time

- A. For
- B. While
- C. Do-while
- D. Switch

8. What is meant by **ifstream** in C++?

- A. Read from a file
- B. Write to a file
- C. Open a file
- D. Close file

9. Programmer can use _____ data type for output file only and it will create the output file if the file does not exist.

- A. Ofstream
- B. Ifstream
- C. Fstream
- D. Iostream

10. What will be the value of **Z = pow(4,3)**?

- A. 16
- B. 64
- C. 7
- D. 81

11. Which of the following compiler directive syntax is **CORRECT** if you want to use the **sin()** function in C++ program?
- A. `#include "cmath.h"`
 - B. `#include <cmath>`
 - C. `#include <sin.h>`
 - D. `#include <cmath.h>`
12. Which of the following is **TRUE** about user-defined functions?
- A. User defined functions come with the compiler.
 - B. Programmer don't have to write the function definition.
 - C. Function definition may be written after function call, provided the function prototype is mentioned before the function call.
 - D. User defined function must always return a value.
13. Which statement is **CORRECT** about the local and global variables?
- A. Local variable will be initialized to 0 automatically
 - B. Global variable will be initialized to 0 automatically
 - C. Local variable can be accessed by any functions in the program
 - D. Global variable only can be accessed by the functions it is declared
14. Which of the following statements is **CORRECT**?
- A. A function prototype contains the statements that make up the function.
 - B. A function call is a statement that causes a function to execute.
 - C. A function header eliminates the need to place a function definition before all calls to the function.
 - D. Function declarations are also known as function calls.

15. When you are doing the function definition, the items below should be included

EXCEPT:

- A. return type: data type of the value that function returns to the part of the program that calls it.
- B. body: statements that perform the function's tasks and enclosed in {}.
- C. name: name of the function. Function names follow the same rules as variables.
- D. argument: the value that needs to be passed to the function.

16. What is the correct term to refer to the statements in the following program segment?

1	char getGrade(int score);
2	float calculatePoint(int score);
3	bool excellent(float point);

- A. Global variable
- B. Function header
- C. Function call
- D. Function prototype

17. How to input multiple values from user in one line in C++?

- A. `cin>>a>>b;`
- B. `cin>>a,b;`
- C. `cin>>a;>>b;`
- D. `cin>>a;cin>>b;`

18. Which of the following operations can be carried out by `#include<iostream>`?

- A. Read the input from keyboard.
- B. Display the output on the screen.
- C. Read the mathematical expression.
- D. Format the floating-point values on output operations.

19. Which of the following **cout** statements are **FALSE**?

- A. `cout << "Hello, there! <<" endl;`
- B. `cout << "Hello, there!";`
- C. `cout << "Hello/n" << "there!";`
- D. `cout << "Hello, "; cout << "there!";`

20. Given the declaration **int TestScore = 78;**, which of the output statements given below will **NOT** produce the output:

1234567890

Score:##78

Note: The # symbol is used to indicate an empty space.

- A. `cout << "1234567890" << endl`
`<< "Score: " << TestScore << endl;`
- B. `cout << "1234567890"`
`<< "Score: " << TestScore << endl;`
- C. `cout << "1234567890\n"`
`<< "Score: " << TestScore << endl;`
- D. `cout << "1234567890"`
`<< "\nScore: " << TestScore << endl;`

21. Select the correct statements to describe the following program segment.

1	<code>int x = 5;</code>
2	<code>int y = 3;</code>
3	<code>cout << (x > 3 && x < 10);</code>

- A. It will print the output of 1.
- B. It will print the output of 0.
- C. The logical expression is wrong.
- D. The logical expression is false.

22. Given the following program segment, choose the possible values that can be entered to print **"That number is acceptable"**.

1	int number;
2	cin >> number;
3	if (number > 10 && number < 100)
4	cout << "That number is acceptable.\n";
5	else
6	cout << "That number is not acceptable.\n";

- A. 100
- B. 99
- C. 101
- D. 10

23. What is the output for the following program segment?

1	int a = 10;
2	if (a < 10) {
3	cout << "A";
4	} else if (a > 10) {
5	cout << "B";
6	} else {
7	cout << "C";
8	}

- A. A
- B. B
- C. C
- D. ABC

24. What is the output for the following program segment?

1	int a=2;
2	if(a++>0)
3	switch(a) {
4	case 2: a++;
5	break;
6	case 3: a+=6;
7	case 4: a*=8;
8	break;
9	default: a--;
10	}
11	else
12	a++;
13	cout<<a;

- A. 3
- B. 32
- C. 72
- D. 4

25. What of the following sets of values for A, B, C, and D would **NOT** cause the string **"one"** to be printed?

```
1  bool A, B, C, D;  
2  // code that assigns values to A, B, C, and D  
3  
4  if (A && B)  
5      if (!C || !D)  
6          cout << "one" << endl;  
7      else if (D)  
8          cout << "two" << endl;
```

- A. A = true; B = true; C = true; D = true;
- B. A = true; B = true; C = true; D = false;
- C. A = true; B = true; C = false; D = true;
- D. A = true; B = true; C = false; D = false;

26. Given the following program segment, to produce the output **2 4 6 8 10**, what loop condition should be used in the blank below?

```
1  int N = 0;  
2  do {  
3      N = N + 2;  
4      cout << N << ' '  
5  } while (_____);
```

- A. N <= 10
- B. N < 10
- C. N <= 8
- D. N < 8

27. What is the output for the following program segment?

```
1  int count = 1, alpha = 5;
2
3  while (count <= 140) {
4      alpha = alpha + 7;
5      count++;
6  }
7  cout << "loopCount = " << count << endl;
```

- A. 1
- B. 139
- C. 140
- D. 141

28. **fstream** object must specify mode on the open statement. What is the **CORRECT** format for **fstream**?

- A. `fstream infile("demofile.txt", ios::input);`
- B. `fstream infile.open("demofile.txt", ios::input);`
- C. `fstream infile("demofile.txt", ios::in);`
- D. `fstream infile.open("demofile.txt", ios::in);`

29. Given the following code, what is the value of the variable *x*?

```
int fun[5] = {3, 2, 5, 7, 32, 0};
```

```
int x = fun[3];
```

- A. 3
- B. 5
- C. 7
- D. 0

30. Given the following array, what is the row/column referenced by the C++ code after the table?

3	2	4
7	6	8

0	0	1
---	---	---

q_array[0][2];

- A. 4
- B. 2
- C. 8
- D. 0

PART B – STRUCTURED QUESTIONS**[55 Marks]**

Answer all the questions and write your answer in the space provided.

Question 1 (10 marks)

Convert the following numbers by showing all steps:

- a. Convert the hexadecimal number, $C38_{16}$, to a decimal number. (2 marks)
- b. Convert the binary number 11011011_2 to an octal number. (2 marks)
- c. Convert the decimal numbers -91_{10} to binary using 8-bit representation and 2's complement. (3 marks)

- d. Convert the binary 11001101_2 to decimal by using 8 bits representation and 2's complement. (3 marks)

Question 2 (10 marks)

Trace the output of the following pseudo code below by completing the trace table in Table 2.

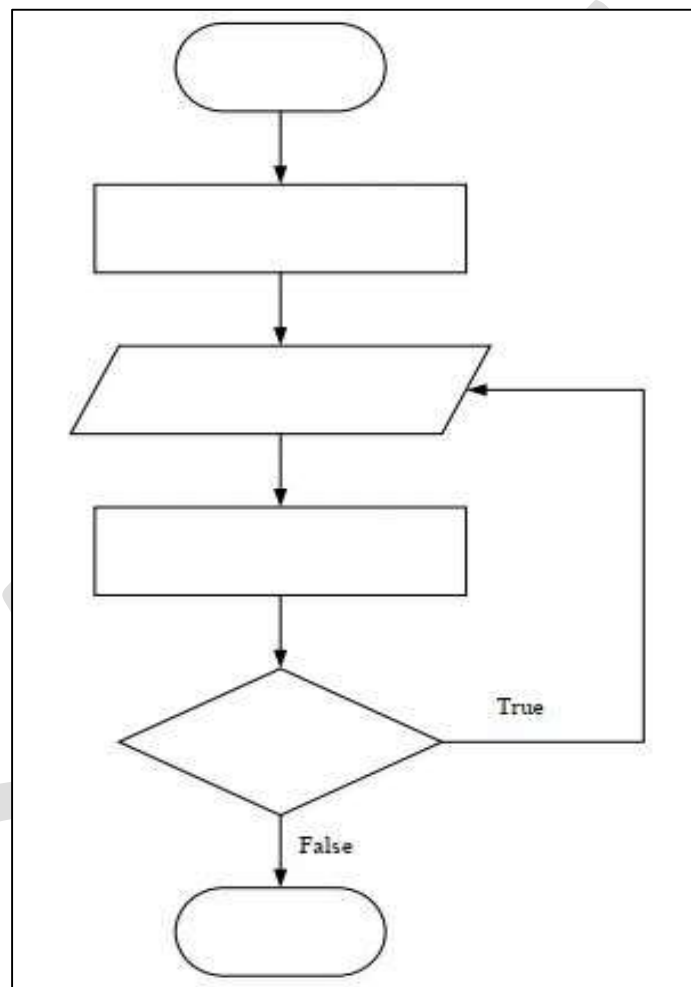
1	Start
2	Set sum = 20
3	Set count = 2
4	Do
5	Print sum
6	sum = sum * count
7	count = count + 1
8	While (sum < 500)
9	End

Sum	count	Sum<500	Output
20	2		20

Table 2

Question 3 (10 marks)

Complete the flowchart in Figure 2 to display “Programming” for five (5) times. This flowchart is using post-test loop implementation. Take a variable **counter** and set it to zero. Then, it will display "Programming" and increment the variable count by 2. Next, it will check the condition of the counter (you must set the condition accordingly). If it is true, then it will display again "Programming" (until 5 times) and increment the variable count. Otherwise, the flowchart will end.

**Figure 2**

Question 4 (12 marks)

The following C++ Program cannot be compiled. It has syntax errors and incorrect sequence order. Rearrange the lines, trace and correct the program to be compiled and executed to produce the output as indicated in Figure 3. Write your answer in Table 2.

1	#include <ostream>
2	using namespace std
3	int main()
4	{
5	int salesdiv = 0.62;
6	int salescomp = 4.6
7	cin << "The total sales for this month is: RM division << " million " <<
8	endl << endl;
9	double division = salesdiv * salescomp;
10	system("pause")
11	return;
12	}

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Figure 3

Question 5 (7 marks)

There are five operators shown in the expression as in the given figure. Label the order of execution for each operator in the boxes as stated in the expression. The operator that will be executed first should be labeled as 1, the second operator to be executed should be labeled as 2, and so on. Finally, give the result of the expression according to the sequence of executions.

int a	=	15	+	21	%	3	-	4	*	(30	/	6)

Answer: a = _____

Question 6 (6 marks)

What will the following code segment print on the screen?

1	int x = 7, y = 3;
2	bool s = true;
3	
4	cout<< ((x + s) > (y + 4)) << endl;
5	cout<< (((s == 0) + 1) && ((s + 1) == 1)) << endl;
6	cout<< ((y != 5) (y != x)) << endl;

Answer: