Subject: Programming Fundamentals
Course Code: CS111
Class: BS-CYS Fall 21
Section: A-B

Total Marks: 30
Date: Nov 8, 2021
Duration: 2 Hours
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Answer all questions.

Q. No	Questions	Marks	CLO
1	a. What are the data types? Why do we require data types? b. What is the difference between declaration and initialization? How many statements are required to achieve this? c. What is the difference between Compiler and Interpreter? d. How is an executable created from a High-Level Program? e. What are keywords, operators, and punctuation in C++?	(2*5=10)	1
2	a. Write pseudocode, flowchart, and C++ program to find if the user entered number is negative, even, odd or prime? b. Write a C++ program to display this pattern using a nested loop. No of rows will be equal to the input number entered by users. ``` Enter number of rows: 8 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 1 2 3 4 5 6 1 2 3 4 5 1 2 3 4 1 2 3 1 2 1 Press any key to continue . . . ```	(2*5=10)	2
3	a. Write the output of this program: ```cpp #include <iostream.h> main() { int n = 4, k = 2; cout << ++n << endl; cout << n << endl; cout << n++ << endl; cout << n << endl; cout << n + k << endl; cout << " n" << endl; cout << "\n" << endl; cout << " n * n = "; //CAREFUL! cout << n * n << endl; cout << 'n' << endl; return 0; } ```	(2*5=10)	3

b. Write the output of this program:

```cpp
#include <iostream.h>

main()
{
    int n = 3;
    while (n >= 0)
    {
        cout << n * n << endl;
        --n;
    }

    cout << n << endl;

    while (n < 4)
        cout << ++n << endl;

    cout << n << endl;

    while (n >= 0)
        cout << (n /= 2) << endl;

    return 0;
}
```

*************** End of Examination Paper ********************