

Department of Computer Science and Engineering
University of Liberal Arts Bangladesh
Mid-Term Examination (Fall 2020)
Course: Object Oriented Programming C++ (CSE 201)
Section: 2 --- Duration: 1 Hour

PLEASE ANSWER ALL QUESTIONS.

Total 25 Marks

QUESTION 1

What is encapsulation and how can you achieve it using C++? What is the goal of abstraction?
How do you implement abstraction in C++? **(2+1+2=5 Marks)**

QUESTION 2

Define the terms “class” and “object”. Why do you think they are important in OOP? **(5 Marks)**

QUESTION 3

A program needs a class to represent the time. You are the hired programmer to write the class. Suppose you are naming the class `CustomTime`. Here is a list of your responsibilities:

- Define the class `CustomTime` with three integer attributes for hour, minute and second. The class must also have the following methods:
 - `void init(int hour, int minute, int second);`
takes three parameters and sets the value of each attribute to the value of the parameter with the corresponding name.
 - `void init();`
writes the current time to the corresponding attribute.
 - `void print();`
outputs time using the the format `hour:minute:second`.
- Assume a 24-hour format for the class and write a main function where a `CustomTime` is created using both `init` functions. Display the time for both objects.
- To get current time, include the library `ctime` and then add the following code:

```
time_t now = time(0);  
tm *ltm = localtime(&now);  
hour = ltm->tm_hour;  
minute = ltm->tm_min;  
second = ltm->tm_sec;
```

Implement the code.

(10 Marks)

QUESTION 4

Describe the usage of `setprecision`, `setw` and `setfixed` in C++ with proper examples. **(5 Marks)**

****END OF QUESTIONS****