JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST-1 EXAMINATION – February 2020
B.Tech, VIth Semester, ECE

COURSE CODE: **10B11CI614/ 10B11CI311**          MAX. MARKS: **15**

COURSE NAME: **OBJECT ORIENTED SYSTEMS AND PROGRAMMING**

COURSE CREDITS: **4**

MAX. TIME: One Hr

**Note:** *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Missing data, if any, can be appropriately assumed.*

1(a). What is object oriented paradigm? Using a suitable example explain how it is different from the structured programming approach.          (2)

(b). Define a class Complex, which should be able to create complex numbers from real and imaginary parts (use constructor). The class also should have functions to add, subtract and display complex numbers (use member functions). Write a main program to test your class.          (3)

2(a). What are constant member functions and static member functions? Describe a situation where each of this member function are used.          (2)

(b) A temperature sensor and a photo sensor are connected to a microprocessor based data acquisition system. The data acquisition system is connected to a PC by serial communication link. The data acquisition system needs to be initialized with a serial communication baud rate before acquiring any data. Library functions to initialize the data acquisition system and read values are supplied by the manufacturer. *void init_daq(int baud)* is the function to initialize the data acquisition system where the parameter baud is the baud rate. *int get_value(int ch)* is the function to read value where, *ch* represents channel. *ch* = 1 represents temperature sensor and *ch* = 2 represents photo sensor. Define a class Sensor with data members to store values acquired, a constructor initialize the system and public member functions to read and display the values.          (3)

3. Define a class Student with data members name and roll no. Using object oriented approach write a C++ program to read a specified no. of students' data interactively from the user and store into a binary file, 'student_data.bin'.          (5)