



Department of Biomedical Engineering
Faculty of Engineering & Applied Sciences
Riphah International University
End Semester Online Examinations, Spring 2020 Semester
B.Sc. Biomedical Engineering

Course Name:	Object Oriented Programming	Date of Examination:	
Course Code:	CS-112	Total Marks:	40
Semester:	2nd	Exam Duration:	0900-1600
Section:	Nil	Teacher Name:	Engr. Pertab Rai

Instructions: Please read the below instruction before attempting the exam questions.

1. The exam is an open book. Students can get help from books and lecture notes.
2. Attempt all questions; marks and CLOs of each question are duly mentioned.
3. For student's queries, the course teacher will be available from 10:00 am to 11:00 am on MS-Teams. Please ask the relevant question.
4. After completing the exam, only upload **Source File** with **.CPP extenstion**. File name must be your name and SAP-ID. e.g., (Nicola Tesla 1122).
5. Upload the solutions on Moellim before the end time. For students having low internet speed, please start uploading well before the end time.
6. The answers must be retained by students until the announcement of results.
7. Faculty have formed a **zero-tolerance policy** about cheating in examinations. Therefore, based on your exam answers, if the teacher found any student involved in copying from peers will have an online viva session with the course teacher or get zero marks.

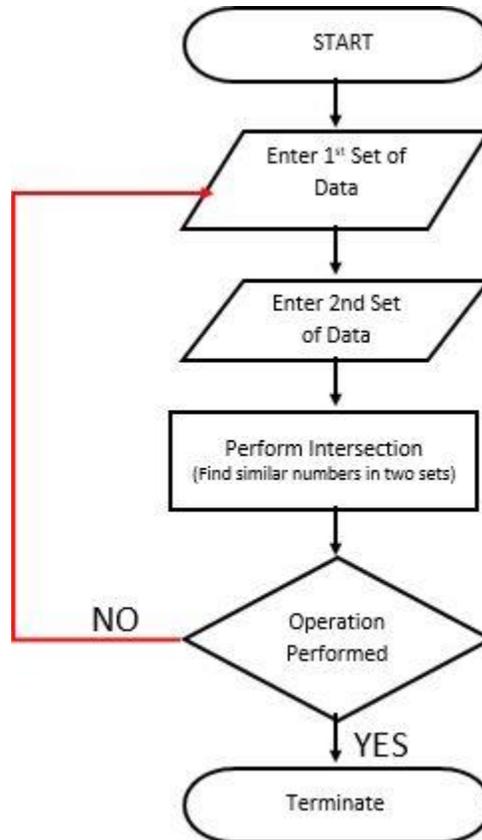
Question Paper

Q.1

CLO No. 02

MARKS 15

Develop a C++ based program which reflects the implementation of following flowchart.



Q.2

CLO No. 02

MARKS 15

Develop a C++ code which could generate the following number series: $-1, +1, -2, +2, -3, +3 \dots \dots$

Q.3

CLO No. 02

MARKS 10

Create a class that includes a data member that holds a “serial number” for each object created from the class. That is, the first object created will be numbered 1, the second 2, and so on. To do this, you’ll need another data member that records a count of how many objects have been created so far. (This member should apply to the class as a whole; not to individual objects. What keyword specifies this?) Then, as each object is created, its constructor can examine this count member variable to determine the appropriate serial number for the new object.

Assessment Rubrics

Rubrics for Programming & Simulation Courses						
Sr. no	Performance Indicator	Excellent (100 %)	Good (75%)	Fair (50%)	Poor (25%)	Did not Attempt (0)
1	Program/Simulation Execution	Program/simulation executes correctly with no syntax or runtime errors	Program/simulation executes correctly with 1-2 minor error (syntax/logical/personal)	Program/simulation executes correctly with more than 2 minor error (syntax / logical / personal)	Program/simulation does not execute or program/simulation is incomplete	Program/simulation was not attempted
2	Correct Output	Program/simulation displays correct output with no error	Output has minor errors	Output has multiple errors	Output is Incorrect	Program/simulation was not attempted
3	Design of Output/ Creativity to improvise output for better understanding of user	Program/simulation display additional information for better understanding of user and output shows creativity	Program/simulation display minimal expected output	Program/simulation does not display required output	Output is poorly designed	Program/simulation was not attempted
4	Design Logic	Program/simulation is logically well designed	Program/simulation has minor logical error/s that do not affect the results significantly	Program/simulation has significant logic errors	Program/simulation is based on incorrect logic	Program/simulation was not attempted