LOVELY PROFESSIONAL UNIVERSITY

Academic Task No. 3

School: SCA   **Faculty of: LFTS**

Course Title: OBJECT ORIENTED PROGRAMMING USING C++(Lab)   **Course Code:CAP445**

Max. Marks: 30[each question 10 Marks]

Date of Allotment: 10th Dec. 2021   **Date of Submission: 15th Dec. 2021**

Important Guidelines:

1. All questions in this Academic Task are compulsory.

2. It is mandatory to attempt all questions of the assignment in your own handwriting on A4 size sheets/pages with a blue color ink pen. Any other mode of attempt (typed or printed codes or table) except hand written/drawn will not be accepted/considered as valid submission(s) under any circumstances.

3. Every attempted sheet/page should carry clear details of student such as Name, Registration number, Roll number, Question number and Page number. The page numbers should be written clearly on the bottom of every attempted sheet in a prescribed format as: for page 1; **Page 1 of 4**, for page 2; **Page 2 of 4**, for page 3; **Page 3 of 4** and for page 4; **Page 4 of 4**, in case your assignment/document is of 4 pages.

4. After attempting the answer(s), student needs to take photograph of each of these answer sheets/pages and needs to convert the **jpeg** format images into a sequential single **pdf** format document (can be done with many free online available converters).

5. This PDF file should be uploaded onto the UMS interface on or before the last date of the submission.

6. Refrain from indulging into plagiarism as copy cases will be marked zero

7. For every program it is mandatory to give proper documentation.

SET-A

Q1. Create a class template 'ArrayList' which define array and size of an array. Create one another template class 'MinMaxArray' which inherits from class template 'ArrayList' which define minimum and maximum element of an array. [10 Marks]

Q2. Create a function template to which calculate total price of purchased items. Take details of product like: product Name, product Price and quantity. [5 Marks]

SET-B

Q1. Write a program to implement following:

- Rethrowing an exception using class

- using multiple catch blocks to handle exceptions using class   [10 Marks]

Q2. Write a program to find the sum of all the odd numbers from array using recursive function templates. [5 Marks]

SET-C

Q1. Write a program to Find the Sum of ASCII values of All Characters in a given String using recursive function templates. [10 Marks]

Q2. Write a program to implement re-throwing exceptions in File handling. [5 Marks]

SET-D

Q1. Write a program to implement following:

   • Rethrowing an exception

   • using multiple catch blocks to handle exceptions.   [10 Marks]

Q2. Write a program to display sum of series using recursive function templates. [5 Marks]

SET-E

Q1. . A teacher wants to determine whether a student should allow for participate in quiz or not. He only allows to the student whose CGPA is not less than 8.5 and student is also a day_scholar. Create a function 'AllowForQuiz (cgpa, day_scholar)' which throw exception if:
AllowForQuiz (7.5, True) → False (Not Allow exception message)
AllowForQuiz (8.5, False) → False (Not Allow exception message)
                                                                      [10 Marks]

Q2. Write a program to find the sum of all the even numbers from array using recursive function templates. [5 Marks]

Serial No	Registration Number	Name	Roll Number	Set
1	12102666	Arunbakam Nagaraju Abhinay	RD2112A01	SET-A
2	12104517	Arun Pratap Singh	RD2112A02	SET-B
3	12106812	Abhishek Kumar	RD2112A03	SET-C
4	12106860	Prabhav Vaishnav	RD2112A04	SET-D
5	12106871	Raman Kumar	RD2112A05	SET-E
6	12106877	Anil Kumar	RD2112A06	SET-A
7	12106882	Bhaskarayini Bhargava	RD2112A07	SET-B

8	12106895	Mohit Khajuria	RD2112A08	SET-C
9	12106759	Akash Mondal	RD2112A09	SET-D
10	12106780	Akash Kumar Mall	RD2112A10	SET-E
11	12111694	Manish Kumar	RD2112A102	SET-A
12	12111670	Jayshri Lal Pandit	RD2112A103	SET-B
13	12111861	Srishti Saini	RD2112A105	SET-C
14	12106562	Aviral Shukla	RD2112A11	SET-D
15	12112954	Shivani gupta	RD2112A114	SET-E
16	12113012	Dependra Garg	RD2112A116	SET-A
17	12113019	Md Aftab quraishi	RD2112A117	SET-B
18	12113027	Anjali Prasad	RD2112A118	SET-C
19	12113030	Kamalesh Ray	RD2112A119	SET-D
20	12107075	Garnipudi Siva Sai Kiran	RD2112A12	SET-E
21	12107106	Utkarsh Singh Chouhan	RD2112A13	SET-A
22	12107108	Shashi Kumar	RD2112A14	SET-B
23	12107218	Mukesh Patra	RD2112A15	SET-C
24	12107241	Subhash Chandra	RD2112A16	SET-D
25	12107142	Tapas Dey	RD2112A17	SET-E
26	12107144	Rijuan Mallick	RD2112A18	SET-A
27	12107168	Aman Kumar	RD2112A19	SET-B
28	12106969	Chorge Nishant bhagwan	RD2112A20	SET-C
29	12107069	Tannu Priya	RD2112A21	SET-D
30	12107037	Shobhit Pandey	RD2112A22	SET-E
31	12107039	Pradeep Chauhan	RD2112A23	SET-A
32	12107058	Manash Ranjan Purohita	RD2112A24	SET-B
33	12107030	Vivek Kumar	RD2112A25	SET-C
34	12106955	Chegu Poornagopi Chandu	RD2112A26	SET-D
35	12107248	Rahul Kumar	RD2112A27	SET-E
36	12107249	Ankit Raj	RD2112A28	SET-A
37	12107216	Paras Sen	RD2112A29	SET-B
38	12107304	Raghuvansh Mani Tiwari	RD2112A30	SET-C
39	12107343	Yash Tandan	RD2112A31	SET-D
40	12112590	Sarthak Verma	RD2112A32	SET-E
41	12107372	Chandra Sekhar Baksi	RD2112A33	SET-A
42	12107352	Sahil	RD2112A35	SET-B
43	12107402	Komal Singh	RD2112A36	SET-C
44	12107389	Aklesh Kumar	RD2112A37	SET-D
45	12107390	Sujal Kumar Gupta	RD2112A38	SET-E
46	12107386	Manish Kumar Choudhary	RD2112A39	SET-A
47	12112598	Anwesha Singh	RD2112A40	SET-B
48	12107418	Madhav Jha	RD2112A41	SET-C

49	12109070	Nikita Kumari	RD2112A42	SET-D
50	12108986	Bharti	RD2112A43	SET-E
51	12108999	Deepak Kumar Prajapati	RD2112A44	SET-A