

**LOVELY PROFESSIONAL UNIVERSITY**

### Academic Task No. 3

**School: SCA**

**Faculty of: LFTS**

**Course Title: OBJECT ORIENTED PROGRAMMING USING C++**

**Course Code:CAP444**

**Max. Marks: 30[each question 10 Marks]**

**Date of Allotment: 10<sup>th</sup> Dec. 2021**

**Date of Submission: 15<sup>th</sup> 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. How to implement the concept of inheritance in template? Explain with example.
- Q2. Write a program to achieve the following:
  - a. implementing overloading of function template
  - b. implementing re-throwing exceptions
- Q3. Differentiate between function template and macros by using examples.

**SET-B**

- Q1. Explain the exception handling mechanism in detail. Discuss the multiple catch statements with the help of program.
- Q2. Write a program to achieve the following:

- a. implementing class template
- b. implementing swap operation using function template

Q3. Discuss recursion with template function and difference between templates and macros.

#### SET-C

Q1. Write a program to achieve the following:

- a. Handling multiple exceptions using multiple catch blocks.
- b. implementing overloading of function template

Q2. Write the difference between templates and macros. Also write the program to differentiate between both.

Q3. How the template class is different from the normal class? Explain with example.

#### SET-D

Q1. What is the difference between function overloading and function template? Elaborate with example.

Q2. How we can overload the function template? Explain the recursive function templates in detail with the help of program.

Q3. What is exception handling? What are the various blocks used in exception handling? Explain in detail with the help of program.

#### SET-E

Q1. Write a program to achieve the following:

- a. implementing class template
- b. implementing re-throwing exceptions

Q2. How we can overload the function template? Explain the recursive function templates in detail with the help of program.

Q3. How to implement inheritance:

- a. template to template
- b. template to class

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2	12104517	Arun Pratap Singh	RD2112A02	SET-B
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49	12109070	Nikita Kumari	RD2112A42	SET-D
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51	12108999	Deepak Kumar Prajapati	RD2112A44	SET-A
52	12111600	Shyam Kumar	RD2112B100	SET-B
53	12108245	Abhay Kumar	RD2112B101	SET-C
54	12111879	Sunita	RD2112B107	SET-D
55	12111883	Muskan	RD2112B108	SET-E
56	12111974	Pallavi	RD2112B109	SET-A
57	12112027	Ajay Singh	RD2112B110	SET-B
58	12112029	Aparna	RD2112B111	SET-C
59	12112715	Vishal Pratap Singh	RD2112B113	SET-D
60	12105488	Amresh Kumar	RD2112B120	SET-E
61	12100159	Aaditya Tyagi	RD2112B121	SET-A
62	12108691	Jain Harshitkumar Gopalbhai	RD2112B46	SET-B
63	12108696	Vashi Dattpalsinh Ajitsinh	RD2112B47	SET-C
64	12108739	Reza Yawari	RD2112B49	SET-D
65	12107456	Shubham Khosla	RD2112B54	SET-E
66	12107507	Jasmeen	RD2112B55	SET-A
67	12107974	Sirjanpreet Kaur	RD2112B56	SET-B
68	12107695	Jobin S	RD2112B58	SET-C
69	12108193	Md.Ghulam Azad Ansari	RD2112B59	SET-D
70	12108151	Aditya Singh	RD2112B60	SET-E
71	12108195	Afsar Alam	RD2112B61	SET-A
72	12108235	Santosh Kumar	RD2112B63	SET-B
73	12108247	Saksham Arora	RD2112B65	SET-C
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75	12108134	Vishal Kumar	RD2112B67	SET-E
76	12108164	Anchal Gupta	RD2112B68	SET-A
77	12108080	Shivam Kumar	RD2112B70	SET-B
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80	12108329	Shreyansh Shekhar	RD2112B73	SET-E
81	12108305	Krishna Kumar	RD2112B74	SET-A
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87	12108465	Akanksha	RD2112B83	SET-B
88	12108451	Shubham Raj Keshri	RD2112B84	SET-C
89	12108480	Nitin Agrahari	RD2112B86	SET-D
90	12108481	Shiv Sundar Das	RD2112B87	SET-E
91	12106006	Astuti	RD2112B88	SET-A
92	12108565	Krrish Kumar	RD2112B89	SET-B
93	12110903	Mohammad Suliman Joya	RD2112B90	SET-C
94	12103717	Apurwa	RD2112B91	SET-D
95	12110950	Pushkar Dahal	RD2112B92	SET-E
96	12111457	Adarsh Kumar	RD2112B95	SET-A
97	12111523	Rajiv Kumar	RD2112B96	SET-B
98	12111537	Ravi Kumar	RD2112B97	SET-C
99	12111549	Ankit Nayak	RD2112B98	SET-D
100	12111590	Shambhavee Kumari	RD2112B99	SET-E