

LOVELY PROFESSIONAL UNIVERSITY

Academic Task No. 1

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: 19th Sept. 2021

Date of Submission: 27th Sept. 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 colour 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.
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SET-A

Q1. Differentiate between multiple and multilevel inheritance. Also discuss about the ambiguity in the multiple inheritance. Give a program to solve the ambiguity.

Q2. Explain the concept of copy constructor in C++ in detail. Illustrate with the help of program.

Q3. Suppose there is XYZ Company and there are different departments like production, marketing, finance, sales etc. Manager of the company want to know about the detail of the employees who are highly paid in each of the department. Write a program using the concept of classes to implement the same.

SET-B

Q1. What is the use of parametrized constructor in C++? How to invoke the parameterized constructor of super class through the sub class constructor? Explain with an example.

Q2. Suppose there is an ATM machine and you want to withdrawal some amount. Currency is available in ATM:2000 Rs. 500 Rs and 100 Rs. Find out total no. of currency according to withdrawal amount. Make sure withdrawal amount should be multiple of 100.

For eg:

Input: Enter withdrawal amount

2500

output: Total 2000 note: 1

Total 500 note: 1

Total 100 note: 0

Q3: What are the different types access specifiers used in C++? Differentiate with examples.

SET-C

Q1. What are the different types of comparison and logical operators are supported in C++? Differentiate between comparison operators and logical operators.

Q2. Create a class named 'Time' with data members (hours, mins, secs). Derive from this class to some new classes named 'hourConvertor', 'minConvertor' and 'secConvertor' with data members total_hours, total_mins and total_secs. With the help of appropriate function calculate total hours, mins and secs for any integer value (in days).

For eg:

Input : 2 (days)

output: total_hours:48

total_mins:2880

total_secs:172800

Q3. Why constructor is required? Can we overload constructor in C++? Discuss with the help of example.

SET-D

Q1. What are the different types of bitwise and logical operators are supported in C++? Differentiate between bitwise operators and logical operators.

Q2. Create a class employee, take appropriate data members and functions which calculate net salary of an employee according to the number of working days and designation. Take employee details from user (name, id, designation and no. of working days)

Q3. How to achieve Encapsulation features in C++? Explain with an example.

SET-E

Q1. Suppose a student wants to collect some information from three different places and after collecting information students want to take decision based on that. Take any one example and write a program to create that application in which you have to apply multiple inheritance concept.

Q2. How copy constructor is different from other constructors? Copy Constructor is used in which cases? With the help of an example discuss.

Q3. With the help of real-life example elaborate the concept of object-oriented programming and also discuss how it is different from procedural programming?

SET-F

Q1. Why copy constructor is required? Can we overload constructor in C++? Discuss with the help of example.

Q2. Suppose there is software company and there are different departments like development, marketing, production and sales. CEO of the company want to know about the detail of the employees who are highly paid in each of the department. Write a program using the concept of classes to implement the same.

Q3. Differentiate between single and multiple inheritance. Also discuss about the ambiguity in the multiple inheritance. Give a program to solve the ambiguity.

LIST OF STUDENTS WITH THEIR SET NAME

Serial No	Reg. No.	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-F
7	12106882	Bhaskarayini Bhargava	RD2112A07	SET-A
8	12106895	Mohit Khajuria	RD2112A08	SET-B
9	12106759	Akash Mondal	RD2112A09	SET-C
10	12106780	Akash Kumar Mall	RD2112A10	SET-D
11	12111694	Manish Kumar	RD2112A102	SET-E
12	12111670	Jayshri Lal Pandit	RD2112A103	SET-F
13	12111768	Aman Pathak	RD2112A104	SET-A
14	12111861	Srishti Saini	RD2112A105	SET-B
15	12111836	Shubham Pandey	RD2112A106	SET-C
16	12106562	Aviral Shukla	RD2112A11	SET-D
17	12112954	Shivani gupta	RD2112A114	SET-E
18	12113006	Mohammed Vahidulla	RD2112A115	SET-F
19	12113012	Dependra Garg	RD2112A116	SET-A
20	12113019	Md Aftab quraishi	RD2112A117	SET-B
21	12113027	Anjali Prasad	RD2112A118	SET-C
22	12113030	Kamlesh RaY	RD2112A119	SET-D
23	12107075	Garnipudi Siva Sai Kiran	RD2112A12	SET-E
24	12107106	Utkarsh Singh Chouhan	RD2112A13	SET-F

25	12107108	Shashi Kumar	RD2112A14	SET-A
26	12107218	Mukesh Patra	RD2112A15	SET-B
27	12107241	Subhash Chandra	RD2112A16	SET-C
28	12107142	Tapas Dey	RD2112A17	SET-D
29	12107144	Rijuan Mallick	RD2112A18	SET-E
30	12107168	Aman Kumar	RD2112A19	SET-F
31	12106969	Chorge Nishant bhagwan	RD2112A20	SET-A
32	12107069	Tannu Priya	RD2112A21	SET-B
33	12107037	Shobhit Pandey	RD2112A22	SET-C
34	12107039	Pradeep Chauhan	RD2112A23	SET-D
35	12107058	Manash Ranjan Purohita	RD2112A24	SET-E
36	12107030	Vivek Kumar	RD2112A25	SET-F
37	12106955	Chegu poornagopi Chandu	RD2112A26	SET-A
38	12107248	Rahul Kumar	RD2112A27	SET-B
39	12107249	Ankit Raj	RD2112A28	SET-C
40	12107216	Paras Sen	RD2112A29	SET-D
41	12107304	Raghuvansh Mani Tiwari	RD2112A30	SET-E
42	12107343	Yash Tandan	RD2112A31	SET-F
43	12112590	Sarthak Verma	RD2112A32	SET-A
44	12107372	Chandra Sekhar Baksi	RD2112A33	SET-B
45	12107348	Rahul Verma	RD2112A34	SET-C
46	12107352	Sahil	RD2112A35	SET-D
47	12107402	Komal Singh	RD2112A36	SET-E
48	12107389	Aklesh Kumar	RD2112A37	SET-F
49	12107390	Sujal Kumar Gupta	RD2112A38	SET-A
50	12107386	Manish Kumar Choudhary	RD2112A39	SET-B
51	12112598	Anwesha Singh	RD2112A40	SET-C
52	12107418	Madhav Jha	RD2112A41	SET-D
53	12109070	Nikita Kumari	RD2112A42	SET-E
54	12108986	Bharti	RD2112A43	SET-F
55	12108999	Deepak Kumar Prajapati	RD2112A44	SET-A
56	12111600	Shyam Kumar	RD2112B100	SET-B
57	12108245	Abhay Kumar	RD2112B101	SET-C
58	12111879	Sunita	RD2112B107	SET-D
59	12111883	Muskan	RD2112B108	SET-E
60	12111974	Pallavi	RD2112B109	SET-F
61	12112027	Ajay Singh	RD2112B110	SET-A
62	12112029	Aparna	RD2112B111	SET-B
63	12112710	Pradeep Harijan	RD2112B112	SET-C
64	12112715	Vishal Pratap Singh	RD2112B113	SET-D
65	12105488	Amresh Kumar	RD2112B120	SET-E

66	12100159	Aaditya Tyagi	RD2112B121	SET-F
67	12108502	Adarsh Kumar	RD2112B45	SET-A
68	12108691	Jain Harshitkumar Gopalbhai	RD2112B46	SET-B
69	12108696	Vashi Dattpalsinh Ajitsinh	RD2112B47	SET-C
70	12108739	Reza Yawari	RD2112B49	SET-D
71	12108676	Deepak Dhan	RD2112B50	SET-E
72	12107424	Priyanshu Raj	RD2112B53	SET-F
73	12107456	Shubham Khosla	RD2112B54	SET-A
74	12107507	Jasmeen	RD2112B55	SET-B
75	12107974	Sirjanpreet Kaur	RD2112B56	SET-C
76	12107695	Jobin S	RD2112B58	SET-D
77	12108193	Md.Ghulam Azad Ansari	RD2112B59	SET-E
78	12108151	Aditya Singh	RD2112B60	SET-F
79	12108195	Afsar Alam	RD2112B61	SET-A
80	12108205	Gangadhari Sai Kiran	RD2112B62	SET-B
81	12108235	Santosh Kumar	RD2112B63	SET-C
82	12108247	Saksham Arora	RD2112B65	SET-D
83	12108142	Irshad Khazir Bhat	RD2112B66	SET-E
84	12108134	Vishal Kumar	RD2112B67	SET-F
85	12108164	Anchal Gupta	RD2112B68	SET-A
86	12108089	Shubham Kumar	RD2112B69	SET-B
87	12108080	Shivam Kumar	RD2112B70	SET-C
88	12108071	Maulik Jain	RD2112B71	SET-D
89	12108052	Deepak Vishwakarma	RD2112B72	SET-E
90	12108329	Shreyansh Shekhar	RD2112B73	SET-F
91	12108305	Krishna Kumar	RD2112B74	SET-A
92	12108372	Shalini kumari	RD2112B75	SET-B
93	12108423	Megha Garhkoti	RD2112B77	SET-C
94	12108382	Akash Raj	RD2112B78	SET-D
95	12108385	Ms. Bhawna Kewlani	RD2112B79	SET-E
96	12108389	Vasisth Roy	RD2112B80	SET-F
97	12108348	Aniket Kumar	RD2112B81	SET-A
98	12108465	Akanksha	RD2112B83	SET-B
99	12108451	Shubham Raj Keshri	RD2112B84	SET-C
100	12108480	Nitin Agrahari	RD2112B86	SET-D
101	12108481	Shiv Sundar Das	RD2112B87	SET-E
102	12106006	Astuti	RD2112B88	SET-F
103	12108565	Krrish Kumar	RD2112B89	SET-A
104	12110903	Mohammad Suliman Joya	RD2112B90	SET-B
105	12103717	Apurwa	RD2112B91	SET-C
106	12110950	Pushkar Dahal	RD2112B92	SET-D

107	12111457	Adarsh Kumar	RD2112B95	SET-E
108	12111523	Rajiv Kumar	RD2112B96	SET-F
109	12111537	Ravi Kumar	RD2112B97	SET-A
110	12111549	Ankit Nayak	RD2112B98	SET-B
111	12111590	Shambhavee Kumari	RD2112B99	SET-C