

G.R. No.

Paper code - U218-126 (T2)

**OCTOBER 2018/ IN-SEM (T2)****S. Y. B. TECH. (COMPUTER) (SEMESTER - I)****COURSE NAME: OBJECT ORIENTED PROGRAMMING****COURSE CODE: (CSUA21176)****(PATTERN 2017)**

Time: [1 Hour]

[Max. Marks: 30]

**Instructions to candidates:**

- 1) Answer Q.1 OR Q.2 and Q.3 OR Q.4.
- 2) Figures to the right indicate full marks.
- 3) Use of scientific calculator is allowed
- 4) Use suitable data wherever required

Q.1) a) Write a program in C++ that reads a group of numbers from the user and places them in an array of type float. Once the numbers are stored in the array, the program should average them and print the result. **Use pointer notation.**

[6]

b) Explain dynamic memory operators in C++ with example of each.

[6]

c) What is virtual base class? Explain with example.

[4]

**OR**

Q.2) a) What is abstract class ? Explain with C++ Program.

[6]

b) Write a program in C++ to create media as a base class (which stores title and price of publication ) and two derived classes book (which stores number of pages) and tape (which stores playing time of tape) . Accept the book and tape details from user and print details using display as a virtual function.

[6]

c) What is **this** pointer? Demonstrate the use of **this** pointer.

[4]

Q.3) a) Create User defined exception to check the following conditions and throw the exception if the criterion does not meet. [6]

- a. User has age between 18 and 55
- b. User stays has income between Rs. 50,000 – Rs. 1,00,000 per month
- c. User stays in Pune / Mumbai/ Bangalore / Chennai
- d. User has 4-wheeler

Accept age, Income, City, Vehicle from the user and check for the conditions mentioned above. If any of the condition not met then throw the exception.

b) Can there be more than one arguments to template? Justify with example. [4]

c) What are different types of error? Explain exception handling mechanism in detail. [4]

OR

Q.4) a) Write a program to convert meters (M) into kilometers (KM). The value of meters (M) should be always less than 1000. The program must throw exception if the value of M become equal or exceeds 1000. It must also specify the function that generates the exception along with value that causes exception. [6]

b) Write a program in C++ to swap two variables of type (integer character, Float) using function template. [4]

c) Explain the following [4]

- a) try block
- b) throw
- c) catch
- d) re-throw an exception