MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

III SEMESTER BTECH. (INFORMATION TECHNOLOGY/COMPUTER AND COMMUNICATION ENGINEERING) END SEMESTER EXAMINATIONS, JAN 2022
SUBJECT: OBJECT ORIENTED PROGRAMMING [ICT 2155] - PART B
REVISED CREDIT SYSTEM
(20/01/2022)

TIME: 75+10 minutes   **MAX. MARKS: 20**

Instructions to candidates
- Answer **ALL** questions.
- Missing data, if any, may be suitably assumed.

Q. No.	Questions	Marks
1A	Define a class to store District-wise corona details such as district-name, positive cases, deaths, vaccinations. Define suitable constructors to initialize district-wise details. Define similar state-wise detail class whose fields are same and are computed based on which districts come under which state. Read from the user a particular state-name and district names under that state. Using this data calculate fields in state wise details as total. Finally display the data in state-wise and district-wise fashion. (The covid details for at least 3 states and 3 districts under each state should be considered).	5
1B	Define an interface called Sort with a function called sort(Object [] s); Define two classes Employee and Student and implement the interface to sort employees based on employee-no and students based on reg-no respectively. In main demonstrate runtime polymorphism.	3
1C.	With an example state how a state of the object can be written to a file and retrieved.	2
2A.	Create two threads "**FindSumThread**" and"**FindSubstringThread**". "**FindSumThread**" reads a list of integers from "**File1.txt**" and finds the elements in pairs whose sum is equal to 10 and writes those pair of numbers into "**File3.txt**". **"FindSubStringThread"** reads a sentence from "**File2.txt**" and finds out the palindrome substring in it with the length of 3 characters. Further writes such substrings into the **"File4.txt"** file. Write a main program to call "**FindSumThread**" and **"FindSubStringThread**" and make sure that the main thread terminates at the end.	5
2B.	Define a class called Vaccine-Info with state and age-wise(like 15-18,…) count of successful vaccination followed in India. Define a Array-list of these nodes and find the state with highest count of successful vaccination and display the same.	3

2C.	Write a swing application to read Omicron cases in 3 states and display total number of Omicron cases in text field upon pressing submit button. Use suitable label and text-fields for reading information.	2