Vinh Long University of Technology Education Faculty of Information Technology Module: Basic Programming Academic year: 2023 -2024

Semester: 2nd

Module Code: TH1219

Exam Code: 01 The exam has 01 page

Duration: 90 minutes

Use of material is not permitted.

EXAM CONTENT

Question 1 (2.0 points):

Write a program to input a positive integer N (N \leq 10); print out the image according to the following pattern:

With N = 4 and N = 5

```
Nhap N = 4
1
2-1
3-2-1
4-3-2-1
```

```
Nhap N = 5
1
2-1
3-2-1
4-3-2-1
5-4-3-2-1
```

Question 2 (3 points):

Write a program to input any string of characters with a length of no more than 20, check whether that string is a valid Vietnamese barcode or not, knowing that a valid Vietnamese barcode must satisfy the following 2 conditions: 13 numeric characters, the first 3 characters must be '8', '9', '3'.

Question 3 (5 points):

ABC Travel Company operating in Vinh Long needs to manage information on actual tours organized by them in 2024, each tour includes the following information: tour code, destination, tour price per guest and number of guests. Write a program to perform the following tasks:

- a. Enter a list of N tours, knowing that: the tour code is a string starting with 2 letters and followed by 3 digits, the minimum number of guests is 10.
- c. Indicate how many tours have more than 50 guests.
- d. Sort the tours in descending order by tour price per guest and print out the list of tours after sorting.
- e. Build a function to find the smallest number among any 3 real numbers.
- f. Use the function in e to tell what the minimum number of passengers is for the first 3 tours.

Note:

- Student's work must be saved in the folder: drive:\ <MSSV>
- The work name must follow the following rule: <mssv>_ question1.cpp, <mssv>_ question2.cpp, <mssv>_ question3.cpp
- At the beginning of each work, note the following line: /*<mssv>_<question code>_<computer number>_<question...>*/
- When the time for the work is up, students delete the *.exe files in the MSSV folder, then compress the MSSV folder and submit the work.



ANH-CANG PHAN