

20-3E

Eastern University

EASTERN UNIVERSITY, SRI LANKA
FIRST EXAMINATION IN SCIENCE 2001/2002
FIRST SEMESTER (April/May)

CS 152 Practical Work on Introduction to Program Design and Programming

Time: 2 Hours

Answer All Questions

{ The programs should be tested for a set of sample data and their listings and output should be handed over to the supervisor }

Q1 Given the following declarations

```
int numLetters;    // Number of letters in user's last name

int i;             // Index variable

char * list;       // Pointer to array of letters in user's last name
```

Write a program that prompts the user for the number of letters in his or her last name, dynamically creates a **char** array of exactly the right size to hold the letters, inputs the letters, prints out the letters in reverse order and deallocates the array.

Q2 Given the following declarations

```
const int NUM_DEPTS=100;
const int NUM_STORES=10;
const int NUM_MONTHS=12;
typedef int SalesType[NUM_STORES][NUM_MONTHS][NUM_DEPTS];
```

- (a) Write a C++ function to initialize the array of type *SalesType* to 0.
- (b) Sales figures are kept on items sold by store, by department, and by month. Write a C++ function to calculate and print the total number of items sold during the year by each department in each store. The data is stored in an array of type *SalesType*. The array containing the data should be a parameter. The constants *NUM_STORES*, *NUM_MONTHS*, and *NUM_DEPTS* may be accessed globally.
- (c) Write a main program to test your function.