SCHOOL OF COMPUTING & INFORMATION TECHNOLOGY
Programming 1 – Individual Project (30%)

BROCKLINE MEDICAL CENTRE EMERGENCY PATIENT MANAGEMENT SYSTEM – UE3

A private health institution, Brockline Medical Centre (BMC), at any given day and time has a long line of patients waiting in its emergency department. The triage nurses manning the department wish to keep better track of those waiting in line and so its head nurse, Angela Dawson, has solicited your assistance with developing an emergency patient management system. The development is to take place on a phased basis with specific requirements for each phase.

Part 1 of the project required you to determine the priority level of the patients and the severity of their emergency based on previously established criteria. Assume that the program for Part 1 has already been written accurately. Accomplish the requirements for Part 2 based on what is outlined below.

Part 2

Given: Week of February 16, 2015
Due: Week of March 2, 2015 (*tutorial or lab – consult tutor*)
Weighting: 5%

Having determined the priority level of patients visiting its emergency department, the management of BMC wishes you to develop a program that will assign the patient to the relevant area for referral, as well as to calculate the patient's bill.

Input to this program consists of the patient's identification number, the patient's name and his/her priority level that was previously established (note that at this time you do not need to rewrite the code for determining the priority level, merely accept this as input to this new program).

The following criteria apply:

Referral Code	Assignment	Referral Cost
D	Patient referred to Doctor on Duty	$1500
N	Patient referred to Nurses Treatment room	$700
H	Patient referred to Health Centre	$100
R	Patient referred to Regional Hospital	$4500 *(if ambulance service is required)* $200 *(if no ambulance service is required)*
A	Patient abandoned ER	$0

Note the following:
- If the priority level is 1, the patient is automatically referred to the Doctor on Duty (code D).
- If the priority level is 2, then the head nurse will input one of the listed codes (other than code D) to refer the patient.
- The patient's bill for visiting the emergency room includes a standard fee of $1500 along with the relevant cost for the referral.

- Your code should demonstrate the use of a constant identifier for the standard fee as well as CASE logic for determining the relevant patient assignment and cost.
- The patient's priority level and referral code should be validated
- The output should consist of the patient's identification number, name, referral code and bill.

Required:

    i.   The input, processing and output requirements for Part 2

    ii.   The pseudocode which correctly expresses the logic as described above.

    iii.   A trace table with at least one set of input data corresponding to each of the referrals outlined above.

    iv.   A flowchart which accurately represents the pseudocode produced.

    v.   A C program which implements the logic in your design.

Mark Scheme

Deliverable	Marks	Notes
1. Input, Processing & Output Requirements	5	
2. Pseudocode (accuracy of logic)	20	
3. Trace Table (accurate applicability of rules, agreement of trace table to the pseudocode provided)	10	
4. Flowchart (accuracy of logic, agreement of flowchart to the pseudocode provided)	14 + 6	
5. C program (fully documented – purpose of program, useful comments throughout, useful variable names)	12	
6. Overall Presentation (timely delivery, neatness, readability, ability to explain design if required)	6	
7. Declaration of Authorship Submission	2	
Total	**75**	