UNIVERSITY OF LAGOS

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

B.Sc. (Hons) Electrical/Electronics Engineering Degree Examination

FIRST SEMESTER 2011/2012 SESSION

EEG 311 COMPUTER PROGRAMMING LANGUAGES II TIME ALLOWED: 45 minutes

INSTRUCTIONS: Answer <u>Any One</u> Question

Use Multiple files arrangement for your programming task

Part B

Question 1

Write a C++ program that will ask the user to input his/her names as a single entity, the number of registered courses in a semester, course code, course unit and grade of each course and then compute the following parameters: UA (Unit Attempted), UP (Unit Passed), WS (Weighted Score) as the product of UA and Grade Point, where grade point is as indicated below, and GPA (Grade Point Average) as the quotient of WS and UA. The results should be displayed as depicted in Fig. Q1. Note that **xx** refers to actual values computed with the program. [70 marks]

[Grade Point: A – 5 point, B – 4 points, C – 3 points, D – 2 points, E – 1 point and E – 0 point]

Ahmed Bayo

Course Code	**Unit**	**Grade**
EEG201	2	A
EEG203	3	B
.	.	.
.	.	.

UA = xx
UP = xx
WS = xx
GPA = xx

Figure 1

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<u>Question 2</u>

Consider two objects, cylinder and sphere. The volumes of the objects are governed by the following expressions:

$$Vol\_Cylinder = \pi r^2 h, \qquad Vol\_Sphere = \frac{4}{3}\pi r^3$$

where h is the height of the cylinder whilst r designate the radius of both the base of the cylinder and sphere.

Setup a C++ class for both the sphere and cylinder that will compute their volumes. The data members should be initialized to unity in the first instance and values of the data members as well as the volumes should be displayed on the screen. Furthermore, the classes should be able to accept the user's input values and compute the corresponding volumes. The input values and volumes for both the sphere and cylinder, respectively, should be displayed on the screen. [70 marks]