INSTITUTE OF ADVANCED TECHNOLOGY

DIPLOMA EXAMINATIONS 2014

SEMESTER II EXAMINATIONS FOR THE DIPLOMA IN ICT MANAGEMENT

DICT 0206: OBJECT ORIENTED PROGRAMMING IN C++

DATE: 12th Aug 2014 TIME: 4.30 PM – 6.30 PM

Instructions to Candidates

- **Answer ALL Questions in Section A and Any other TWO from Section B.**
- **Write your registration number on all the answer sheets used.**
- **Use a NEW PAGE FOR EVERY QUESTION attempted, and indicate the question number on the space provided on each page of the answer sheet.**
- **Fasten together all loose answer sheets used.**
- **Switch off all Mobile Phones and PDAs.**

SECTION A: COMPULSORY QUESTION {20 MARKS}

QUESTION 1

a) Briefly explain the concept **'Object oriented'** as used in C++. **(2 Marks)**

b) State the purpose of the following in programming

i. Constructor **(1 Mark)**

ii. Arrays **(1 Mark)**

iii. Destructor **(1 Mark)**

iv. Object **(1 Mark)**

c) Use the following code snippet to answer questions (c. i, ii) below:

void MyRectangle:: setValues (int a, int b) {..

i. What name do you give this (**::**) operator in C++? **(1 mark)**

ii. Explain its meaning in the above code snippet **(3 marks)**

d) Briefly explain three visibility modes of variables used in OOP. **(6 marks)**

e) Write a program using "for loop" to print on the screen : 10 : 9 : 8 : …..: 0 **(4 marks)**

SECTION B: ANSWER ANY TWO QUESTIONS {10 MARKS EACH}.

QUESTION 2

a) Both Muoki and Muli are dating Maars. To show their prowess in programming and perhaps win her heart, they decide to include inheritance concept in their 'pick up lines'. Unfortunately they are not well versed with the concept and they approach you for consultation. In your bid to assist, you asks them to:

i. Define the term inheritance as used in OOP **(2 marks)**

ii. Describe any **FOUR** types of inheritance used in C++ **(4 marks)**

iii. Write a simple program to illustrate the concept of inheritance **(4 marks)**

Provide probable answers to the questions above.

QUESTION 3

a. Define the term **function** as used in OOP **(1 mark)**

b. List and explain two mechanisms of passing arguments to a function **(4 marks)**

c. Create a class *circle* that uses two functions to calculate and print the area and the circumference of a circle

$A = \pi r^2$

circumference = $2\pi r$

$\pi = 3.14$ **(5 marks)**

QUESTION 4

a. What is a variable in C++? Give 2 types? (**3 marks)**

b. Explain using example five different types of operators found in C++. **(5 Marks)**

c. Define a structure employee that stores the employee name, numerical id number and the department s\he works for. **(2 marks)**

QUESTION 5

a) Define the term polymorphism **(2mark)**

a) Sonko-Shebesh, a first semester student at IAT wanted to understand function overloading; you have been chosen to guide him. Use the following guide;-

i. Discuss the concept **(2 marks)**

ii. Demonstrate to him using a working code ***(note comment your work appropriately)*** **(6 marks)**

End of Exam