

**NCC EDUCATION**

**INTERNATIONAL DIPLOMA  
IN  
COMPUTER STUDIES**

**PROGRAMMING METHODS**

**DECEMBER 2008 – LOCAL EXAMINATION**

**SECTION A**

**Answer all questions from this section.**

**SECTION B**

**Answer any 2 questions from this section.**

**Time: 2 hours**

**Clearly cross out surplus answers.**

**Failure to do this in Section B will result in only the first two answers being marked.**

**Any reference material brought into the examination room must be handed  
to the invigilator before the start of the examination.**

**SECTION A****ANSWER ALL QUESTIONS IN THIS SECTION**

	<b>Marks</b>
<b>QUESTION 1</b> Briefly explain the difference between <i>Third Generation Languages (3GL)</i> and <i>Fourth Generation Languages (4GL)</i> .	<b>4</b>
<b>QUESTION 2</b> Explain the difference between the 'and' and 'or' logic operations. Give an example of each.	<b>4</b>
<b>QUESTION 3</b> State FOUR (4) advantages of using <i>CRC (Class, Responsibility, Collaboration)</i> cards.	<b>4</b>
<b>QUESTION 4</b> Explain the difference between a <i>compiler</i> and an <i>interpreter</i> .	<b>4</b>
<b>QUESTION 5</b> State any FOUR (4) programming languages that can be used to develop web applications.	<b>4</b>
<b>QUESTION 6</b> Explain the difference between <i>user documentation</i> and <i>system documentation</i> .	<b>4</b>
<b>QUESTION 7</b> Define an <i>object-oriented (OO) language</i> and state TWO (2) advantages of OO languages.	<b>4</b>
<b>QUESTION 8</b> Rewrite the following <i>REPEAT...UNTIL</i> statement using a <i>FOR</i> loop. num=10 REPEAT num:= num + 5 Display num UNTIL num < 100	<b>4</b>
<b>QUESTION 9</b> Explain the difference between <i>sequence diagrams</i> and <i>collaboration diagrams</i> .	<b>4</b>
<b>QUESTION 10</b> List FOUR (4) duties of the <i>Database Administrator</i> .	<b>4</b>

**Total 40 Marks****QUESTIONS CONTINUE ON NEXT PAGE**

<b>SECTION B</b>
<b>ANSWER ANY TWO QUESTIONS</b>

<b>QUESTION 1</b>	<b>Marks</b>
A) State FIVE (5) reasons why robust and reliable software is needed.	<b>10</b>
B) Explain the difference between:	
i) Inheritance and Polymorphism	<b>4</b>
ii) A WHILE loop and a REPEAT...UNTIL	<b>4</b>
C) Draw a flowchart to solve the following problem:	<b>12</b>
Your system must allow the user to input TEN (10) employee's annual income. If the annual income is greater or equal to \$50,000, a 6% tax on the income must be charged, otherwise only 4% will be charged.	
<b>Total 30 Marks</b>	

<b>QUESTION 2</b>	<b>Marks</b>
A) List and explain five levels of testing.	<b>10</b>
B) Name and draw the UML notation for THREE (3) use case elements	<b>6</b>
C) Draw a collaboration diagram for following specification:	<b>10</b>
The student needs to log into the student system to enrol for modules at the beginning of every semester. After registration, the system will display a list of registered module names and their corresponding module codes	
D) List FOUR (4) attributes of good documentation.	<b>4</b>
<b>Total 30 Marks</b>	

<b>QUESTION 3</b>	<b>Marks</b>
A) List and explain the FIVE (5) stages of the <u>Software</u> Development Lifecycle.	<b>10</b>
B) Briefly explain the THREE (3) specifications included in System Documentation.	<b>6</b>
C) Write the Bubble sort algorithm to sort TEN (10) integers.	<b>10</b>
D) State TWO (2) examples of the Third Generation Languages and TWO (2) examples of Object-oriented Languages.	<b>4</b>
<b>Total 30 Marks</b>	

**END OF PAPER**