MODULE NAME:	MODULE CODE:
PROGRAMMING LOGIC AND DESIGN (INTRODUCTION)	PRLD5111
PROGRAMMING LOGIC AND DESIGN (INTRODUCTION)	PRLD5111d
PROGRAMMING LOGIC AND DESIGN (INTRODUCTION)	PRLD5111p

ASSESSMENT TYPE:	**REVISED TEST (PAPER ONLY)**
TOTAL MARK ALLOCATION:	**60 MARKS**
TOTAL TIME:	**The time given to students to complete this assessment will be indicated on your module in *Learn.***

By submitting this assessment, you acknowledge that you have read and understood all the rules as per the terms in the registration contract, in particular the assignment and assessment rules in The IIE Assessment Strategy and Policy (IIE009), the intellectual integrity and plagiarism rules in the Intellectual Integrity Policy (IIE023), as well as any rules and regulations published in the student portal.

INSTRUCTIONS:

1. *Please **adhere to all instructions**. These instructions are different from what is normally present, so take time to go through these carefully.*
2. ***Independent work is required**. Students are not allowed to work together on this assessment. Any contraventions of this will be handled as per disciplinary procedures in The IIE policy.*
3. ***No material may be copied from original sources, even if referenced correctly, unless it is a direct quote indicated with quotation marks.***
4. *All work must be adequately and correctly referenced.*
5. *You should paraphrase (use your own words) the concepts that you are referencing, rather than quoting directly.*
6. *Marks will be awarded for the quality of your paraphrasing.*
7. *This is an open-book assessment.*
8. *Assessments must be typed unless otherwise specified.*
9. ***Ensure that you save a copy of your responses.***
   a. *Complete your responses in a Word document*
   b. *The document name must be your **name.student number.Module Code**.*
   c. *Once completed the assessment, upload your document under the **submission link** in the correct module in Learn.*

Additional instructions:

- *Calculators are allowed.*
- *For multiple-choice questions, give only one (1) response per question. The marker will ignore any question with more than one answer, unless otherwise stated. You should, therefore, be sure of your answer before committing it to paper.*
- *Answer All Questions.*
- *Instructions for assessments including numerical calculations*

7.1. If you are using a Word Document:

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- *Please see the Word document included as part of this assessment*
- *Tables have been created for you to complete*
- *Use the following to reflect your calculations:*
- *Please use the following symbols:*
- *X: multiply*
- *The document name must be your **name.student number.Module Code**.*
- *Once completed the assessment, upload your document under the **submission link** in the correct module in Learn.*

7.2. If you are completing in a hardcopying/ by hand:

- *You need to create the journal on your piece of paper*
- *Ensure that all your pages are numbered*
- *Perform your calculations as you normally would. Please work neatly so that you do not lose marks because your lecturer cannot read your writing.*
- *Either (i) Scan your pages OR (ii) photograph your pages. Ensure that the pages are in the correct order.*
- *Label your photographs as follows: **name.student number.Module Code.Page 1; (for each page***
- *Once completed the assessment, upload your document under the **submission link** in the correct module in Learn.*

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Referencing Rubric

Providing evidence based on valid and referenced academic sources is a fundamental educational principle and the cornerstone of high-quality academic work. Hence, The IIE considers it essential to develop the referencing skills of our students in our commitment to achieve high academic standards. Part of achieving these high standards is referencing in a way that is consistent, technically correct and congruent. This is not plagiarism, which is handled differently.

Poor quality formatting in your referencing will result in a penalty **of a maximum of ten percent being deducted from the percentage awarded**, according to the following guidelines. Please note, however, that **evidence of plagiarism in the form of copied or uncited work (not referenced), absent reference lists, or exceptionally poor referencing, may result in action being taken in accordance with The IIE's Intellectual Integrity Policy (0023)**.

Markers are required to provide feedback to students by indicating **(circling/underlining) the information that best describes the student's work.**

Minor technical referencing errors: 5% deduction from the overall percentage – the student's work contains **five or more errors** listed in the minor errors column in the table below.

Major technical referencing errors: 10% deduction from the overall percentage – the student's work contains **five or more errors** listed in the major errors column in the table below**.**

If both minor and major errors are indicated, then 10% only (and not 5% or 15%) is deducted from the overall percentage. The examples provided below are not exhaustive but are provided to illustrate the error

Required: Technically correct referencing style	Minor errors in technical correctness of referencing style Deduct 5% from percentage awarded	Major errors in technical correctness of referencing style Deduct 10% from percentage awarded
Consistency • The same referencing format has been used for all in-text references and in the bibliography/reference list.	Minor inconsistencies. • The referencing style is generally consistent, but there are one or two changes in the format of in-text referencing and/or in the bibliography. • For example, page numbers for direct quotes (in-text) have been provided for one source, but not in another instance. Two book chapters (bibliography) have been referenced in the bibliography in two different formats.	Major inconsistencies. • Poor and inconsistent referencing style used in-text and/or in the bibliography/ reference list. • Multiple formats for the same type of referencing have been used. • For example, the format for direct quotes (in-text) and/or book chapters (bibliography/ reference list) is different across multiple instances.
Technical correctness • Referencing format is technically correct throughout the submission. • Position of the reference: a reference is directly associated with every concept or idea. • For example, quotation marks, page numbers, years, etc. are applied correctly, sources in the bibliography/reference list are correctly presented.	Generally, technically correct with some minor errors. • The correct referencing format has been consistently used, but there are one or two errors. • Concepts and ideas are typically referenced, but a reference is missing from one small section of the work. • Position of the references: references are only given at the beginning or end of every paragraph. • For example, the student has incorrectly presented direct quotes (in-text) and/or book chapters (bibliography/reference list).	Technically incorrect. • The referencing format is incorrect. • Concepts and ideas are typically referenced, but a reference is missing from small sections of the work. • Position of the references: references are only given at the beginning or end of large sections of work. • For example, incorrect author information is provided, no year of publication is provided, quotation marks and/or page numbers for direct quotes missing, page numbers are provided for paraphrased material, the incorrect punctuation is used (in-text); the bibliography/reference list is not in alphabetical order, the incorrect format for a book chapter/journal article is used, information is missing e.g. no place of publication had been provided (bibliography); repeated sources on the reference list.
Congruence between in-text referencing and bibliography/ reference list • All sources are accurately reflected and are all accurately included in the bibliography/ reference list.	Generally, congruence between the in-text referencing and the bibliography/ reference list with one or two errors. • There is largely a match between the sources presented in-text and the bibliography. • For example, a source appears in the text, but not in the bibliography/ reference list or vice versa.	A lack of congruence between the in-text referencing and the bibliography. • No relationship/several incongruencies between the in-text referencing and the bibliography/reference list. • For example, sources are included in-text, but not in the bibliography and vice versa, a link, rather than the actual reference is provided in the bibliography.
In summary: the recording of references is accurate and complete.	In summary, at least 80% of the sources are correctly reflected and included in a reference list.	In summary, at least 60% of the sources are incorrectly reflected and/or not included in reference list.

Overall Feedback about the consistency, technical correctness and congruence between in-text referencing and bibliography:

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Question 1			**(Marks: 5)**
Multiple-choice questions: Select one correct answer for each of the following. In your answer booklet, write down only the number of the question and next to it, the number of the correct answer.			
Q.1.1	Together, computer hardware and software accomplish three major operations. Which one of the following does not represent one of these major operations?		(1)
	(1)	Input;	
	(2)	Processing;	
	(3)	Evaluation;	
	(4)	Output;	
	(5)	None of the options provided.	
Q.1.2	The stage in the programme development cycle concerned with understanding the needs of the users of a system is named _____.		(1)
	(1)	Understanding the problem;	
	(2)	Planning the logic;	
	(3)	Coding the programme;	
	(4)	Testing the programme;	
	(5)	Maintaining the programme.	
Q.1.3	Which one of the following does not represent one of the two broad datatypes supported by programming languages?		(1)
	(1)	Numeric;	
	(2)	String;	
	(3)	Boolean;	
	(4)	All of the options provided;	
	(5)	None of the options provided.	

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Q.1.4	Programming logic structures include:		(1)
	(1)	Sequence;	
	(2)	Selection;	
	(3)	Loop;	
	(4)	Recursion;	
	(5)	(1), (2) and (3) only.	
Q.1.5	If j <= k is true, then:		(1)
	(1)	j can be less than k;	
	(2)	j can be equal to k;	
	(3)	j will always be less than or equal to k;	
	(4)	k is less than j;	
	(5)	(1), (2) and (3) only.	

Question 2 (Marks: 30)

Q.2.1	Consider each description below, then **write the pseudocode** statement that will accomplish the task required.		
	Q.2.1.1	A computer application needs to display the sentence 'I will survive' on the screen when executed.	(2)
	Q.2.1.2	A computer application needs to assign a value entered by a user to a variable called *myValue*.	(2)
	Q.2.1.3	A computer application needs to multiply the values 3 and 4 and assign the result of the calculation to a variable called *product.*	(3)

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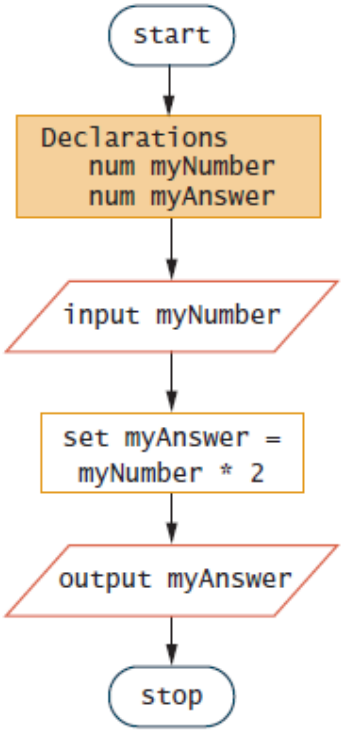
Q.2.2	Consider the flowchart below, then **explain** the logic presented in the flowchart with particular reference to the variables declared and the content of the variables.  	(8)

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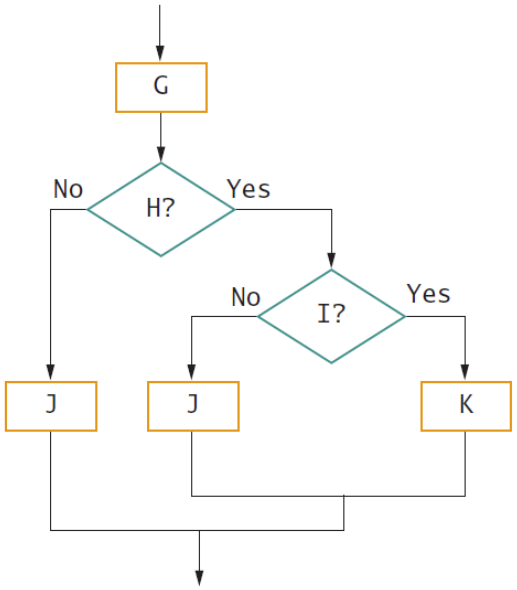
Q.2.3	Consider the following flowchart, then **state** whether it represents a structured solution or not. Motivate your answer by referring to any three characteristics of structured solutions.  	(8)
Q.2.4	**By using examples differentiate** between a single-alternative and a dual-alternative if statement.	(7)

Question 3 **(Marks: 10)**

Read the following scenario, then answer the question that follows:

"An application requires a user to enter two numbers. Once the user has entered the two numbers, the application will call a module to calculate the average of the two numbers. Once the average of the two numbers have been calculated, another module will be called to determine if the average of the two numbers is greater than 75. If the average of the two numbers is greater than 75, the message 'Congratulations, you are in the top 5', will be displayed."

Q.3.1	**Write the pseudocode** that will adequately represent the logic contained in the scenario.	(10)

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Question 4 **(Marks: 10)**

Answer all questions within this section.

Q.4.1 **List any two** conventions for naming a variable, also indicate the one you prefer over the other and motivate why. (6)

Q.4.2 **Redraw** and complete the truth table below for each of the logical operators. (4)

Operation	Outcome
true OR false	
false OR false	
true AND false	
true and true	
NOT false	

Question 5 **(Marks: 5)**

Q.5.1 **Evaluate** the JAVA code snippet below, then **motivate** why this is representative of good programming practices or not. (5)

```
public class pattern{
public static void main(string[] args){
int rows = 5;
for(int i = 1; i <= rows; ++i){
for(int j=1;j<=I;++j){
system.out.print(“*”);
}
System.out.println();
}
}
```

END OF PAPER

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