THE INDEPENDENT INSTITUTE OF EDUCATION

MODULE NAME:	MODULE CODE:
ADVANCED DATABASES	ADDB7311

ASSESSMENT TYPE:	TEST (PAPER AND MEMORANDUM)
TOTAL MARK ALLOCATION:	60 MARKS
TOTAL HOURS:	1.5 HOURS (+10 minutes reading time)

INSTRUCTIONS:

1. *Please adhere to all instructions in the assessment booklet.*
2. *Independent work is required.*
3. *Five minutes per hour of the assessment to a maximum of 15 minutes is dedicated to reading time before the start of the assessment. You may make notes on your question paper, but not in your answer sheet. Calculators may not be used during reading time.*
4. *You may not leave the assessment venue during reading time, or during the first hour or during the last 15 minutes of the assessment.*
5. *Ensure that your name is on all pieces of paper or books that you will be submitting. Submit all the pages of this assessment's question paper as well as your answer script.*
6. *Answer all the questions on the answer sheets or in answer booklets provided. The phrase 'END OF PAPER' will appear after the final set question of this assessment.*
7. *Remember to work at a steady pace so that you are able to complete the assessment within the allocated time. Use the mark allocation as a guideline as to how much time to spend on each section.*

Additional instructions:

1. *This is an OPEN BOOK assessment.*
2. *Calculators are not allowed.*
3. *Answer All Questions.*
4. *Instructions for assessments including practical computer work:*
   - *This is an open book assessment – You may use your prescribed textbooks and help files that are present on the computer.*
   - *Use of good programming practice and comments in code is compulsory.*
   - *Save your application in the location indicated by the administrator (e.g. the Z:\ drive or your local drive).*
   - *Create a folder as follows: use the module code and your own student number and create a folder with a folder name as per the format shown here:*
   - ***StudentNumber_ModuleCode_Exam**. Save all files (including any source code files, template files, design files, image files, text files, database files, etc.) within this folder.*
   - *E.g. if your student number is 12345, and you are writing an examination for the module PROG121, create a folder named **12345_Prog121_Exam** and use this throughout the session to save all of your files.*

- ***Important:*** *Upon completion of your assessment, you must save and close all your open files and double click the ExamLog application on your desktop. You must follow the instructions carefully to ensure that the information about the files that you have submitted for this assessment has been logged on the network. Specify the location of your source code on your question paper.*

5. *Save your work every five minutes.*
6. *Use Oracle 11g™ to complete the questions.*
7. *Copy your answers (SQL and results) to a Microsoft Word™ document, saved as AdvancedDatabases_YourNameSurname_StudentNumber in your local folder.*
8. *All **code** and **output** (captured using the Snipping Tool™) needs to be copied to an MS-Word™ document.*
   - *An **SQL query** is meant to represent a standard syntax SQL query.*
   - *A **PL/SQL query** requires at least an anonymous code block that could contain variables, cursors, conditionals and loop structures.*

Question 1 **(Marks: 60)**

The following set of relations has been set up for a new educational content provider. At present the database is small and only includes information about books, authors and orders. The relationships between the tables must be derived from the data in each of the tables.

The tables and the information required are as follows:

- BOOK(BookID, Title, Price, InStock);
- AUTHOR(AuthorID, FirstName, Surname, Contact);
- ORDERS(OrderID, OrderDate, Qty, BookID, AuthorID).

Sample data is shown below:

BOOK

BOOKID	TITLE	PRICE	INSTOCK
SQL101	SQL in 3 Months	R899.00	55
AND101	Android Development	R599.00	35
C101	Extreme C#	R997.00	15
J101	Java in 3 Months	R557.00	28
IT101	IT System Design	R825.00	29

AUTHOR

AUTHORID	FIRSTNAME	SURNAME	CONTACT
101	Bob	Bobson	021 123 1258
102	Joe	Bloggs	011 175 5859
103	Andre	Smith	041 123 8795

ORDERS

ORDERID	ORDERDATE	QTY	BOOKID	AUTHORID
Order_1	15 May 2016	5	SQL101	101
Order_2	15 May 2016	3	C101	102
Order_3	17 May 2016	5	AND101	103
Order_4	25 May 2016	2	AND101	103
Order_5	28 May 2016	3	SQL101	101

Q.1.1 You need to create the tables given above to complete the test. (10)

Create the tables and populate them using SQL Developer or SQL*Plus.

Q.1.2 Write an SQL query that will display the author name, book title and the order date. Order your results by the book title. (5)

Sample Results:

AUTHOR_NAME	TITLE	ORDERDATE
Andre Smith	Android Development	25/MAY/16
Andre Smith	Android Development	17/MAY/16
Joe Bloggs	Extreme C#	15/MAY/16
Bob Bobson	SQL in 3 Months	15/MAY/16
Bob Bobson	SQL in 3 Months	28/MAY/16

Requirement	Mark Allocation	Examiner
Correct select statement used.	(2)	
Correct tables used.	(2)	
Correct output.	(1)	
Question 1 TOTAL	**(5)**	

Q.1.3 Write an SQL query that will display the book title and the book price. In your query, include the VAT amount of 14% and the total price including VAT for all books that have an order quantity of five (5). (6)

Sample Results:

BOOK_TITLE	PRICE	VAT	TOTAL_PRICE
SQL in 3 Months	R899	R125.86	R1 024.86
Android Development	R599	R83.86	R682.86

Requirement	Mark Allocation	Examiner
Correct select statement used.	(3)	
Correct tables used.	(2)	
Correct output.	(1)	
Question 2 TOTAL	**(6)**	

Q.1.4 Create a PL/ SQL query that will display the author name and the book title for the author whose contact number starts with 011. (10)

Sample Results:

Anonymous block completed

AUTHOR: Joe Bloggs

TITLE: Extreme C#

Requirement	Mark Allocation	Examiner
Variables declared correctly.	(2)	
Correct select statement used.	(2)	
Correct use of cursor.	(2)	
Correct method to display output.	(2)	
Correct use of loop.	(2)	
Question 3 TOTAL	**(10)**	

Q.1.5 Create a PL/ SQL query that will display the total quantity of book orders for a particular author. In your query, make use of variables and a cursor. (10)

Sample Results:

Anonymous block completed

Book sales for Andre Smith are: 7

Book sales for Bob Bobson are: 8

Book sales for Joe Bloggs are: 3

Requirement	Mark Allocation	Examiner
Variables declared correctly.	(2)	
Correct select statement used.	(2)	
Correct use of cursor.	(2)	
Correct method to display output.	(2)	
Correct use of loop.	(2)	
Question 4 TOTAL	**(10)**	

Q.1.6 Create a view called No_Book_Orders that will display the book titles that have not been ordered. (6)

Sample Results:

TITLE

Java in 3 Months

IT System Design

Requirement	Mark Allocation	Examiner
View created correctly.	(2)	
Correct select statement used.	(2)	
Correct method to display output.	(2)	
Question 5 TOTAL	**(6)**	

Q.1.7 Create a PL/ SQL query that will display whether a book in-stock level is low. If the in-stock level is less than 20 units then display: *"Stock levels are not stable. Stock levels need to be increased"*. If the stock level is greater than or equal to 20, display: *"Stock levels are stable"*. In your query, make use of book id C101. (8)

Sample Results:

Anonymous block completed

BOOK ID: C101

BOOK TITLE: Extreme C#

STOCK REPORT: Stock levels are not stable. Stock levels need to be increased.

Requirement	Mark Allocation	Examiner
Variables declared correctly.	(2)	
Correct select statement used.	(2)	
Correct use of selection structures.	(2)	
Correct method to display output.	(2)	
Question 6 TOTAL	**(8)**	

Q.1.8 Create a user called andre_pollack with the password *andre12345*. Assign select privileges to andre_pollack for the Book table. (2)

Requirement	Mark Allocation	Examiner
User created correctly.	(1)	
Privileges assigned correctly.	(1)	
Question 7 TOTAL	**(2)**	

Q.1.9 Create a sequence called seq_author_id that will start at id 104 and increment by one (1). (3)

Requirement	Mark Allocation	Examiner
Sequence created correctly.	(2)	
Sequence starts at 104 and increments by (one) 1.	(1)	
Question 8 TOTAL	**(3)**	

END OF PAPER