MODULE NAME:	MODULE CODE:
ADVANCED DATABASES	ADDB7311

ASSESSMENT TYPE:	**EXAMINATION (PAPER ONLY)**
TOTAL MARK ALLOCATION:	**70 MARKS**
TOTAL HOURS:	**2 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 a OPEN BOOK assessment.*
2. *Calculators are allowed*
3. *For open book assessments the students may have open access to all resources inclusive of notes, books (hardcopy and e-books) and the internet. These resources may be accessed as hard copies or as electronic files on electronic devices. All electronic devices batteries must be fully charged before the assessment as no charging of devices will be permitted during the sitting of the assessment. The IIE and associated brands accept no liability for the loss or damage incurred to electronic devices used during open book assessments.*
4. *Answer All Questions.*
5. *Instructions for assessments including practical computer work:*
   - *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 exam for the module ADDB7311, create a folder named **12345_ADDB7311_EXAM** and use this throughout the session to save all of your files.*

6. ***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.*

Create a database in Oracle 11g named ADDB7311Exam_StudentNumber and execute the preloaded SQL code using either SQL Developer™ or SQL*Plus™ to create the database schema.

Copy and paste your queries into a MS Word™ document. Save this file as "Advanced_Databases_Exam_Student_Number". Write the path and filename of this document on your exam paper.

PRELOADS: ADDB7311Ea_Preload.sql

The following set of relations has been set up for a local police station. At present the database is small and only includes information about officers, citizens, criminals, offences and cases. 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:

OFFICER (OFFICER_ID, OFFICER_FNAME, OFFICER_SNAME, OFFICER_CONTACT)
CITIZEN(CITIZEN _ID, CITIZEN _FNAME, CITIZEN _SNAME, CITIZEN_ADDRESS, CITIZEN_CONTACT)
CRIMINAL(CRIMINAL_ID, CRIMINAL_FNAME, CRIMINAL_SNAME, CRIMINAL_DOB)
OFFENCE(OFFENCE_ID, OFFENCE_NAME, OFFENCE_SENTENCE, OFFENCE_RATING)
CASES(CASE_ID, CASE_DATE, OFFICER_ID, CITIZEN_ID, CRIMINAL_ID, OFFENCE_ID)

Sample Data is shown below:

OFFICER:

OFFICER_ID	OFFICER_FNAME	OFFICER_SNAME	OFFICER_CONTACT
101	Cameron	Willis	0843569851
102	Jess	Wait	0763698521
103	Alex	Gumede	0786598521
104	Bob	Du Preez	0796369857
105	Simon	Jones	0826598741

CITIZEN:

CITIZEN _ID	CITIZEN _FNAME	CITIZEN _SNAME	CITIZEN_ADDRESS	CITIZEN_CONTACT
A1001	Wayne	Bitterhout	15 Table rd	0769856895
A1002	Jeff	James	28 Sea Side rd	0742598657
A1003	Jabu	Bloggs	19 Upper End	0863256982
A1004	Clark	Smith	27 South end	0785659857
A1005	Xolani	Pasela	12 Main rd	0712369571
A1006	Quma	Zola	88 Main rd	0732369551
A1007	Denish	Panisa	12 Cape rd	0812368578

CRIMINAL:

CRIMINAL_ID	CRIMINAL_FNAME	CRIMINAL_SNAME	CRIMINAL_DOB
crim101	Sam	Jackson	01/NOV/79
crim102	Henry	Willis	11/OCT/73
crim103	Bruce	McKenzie	02/NOV/71
crim104	Alex	Conradie	01/JAN/90
crim105	Luvuyo	Zolani	02/JUN/82
crim106	Archie	Klein	12/AUG/75
crim107	Fabian	Willemse	02/NOV/69
crim108	Thomas	Abrahams	22/NOV/80

OFFENCE:

OFFENCE_ID	OFFENCE_NAME	OFFENCE_SENTENCE	OFFENCE_RATING
33311	House Robbery	2 years	2
33312	Hi Jacking	7 years	3
33313	Drug Possession	12 years	8
33314	Attempted Murder	30 years	9
33315	Tax Fraud	20 years	7

CASES:

CASE_ID	CASE_DATE	OFFICER_ID	CITIZEN_ID	CRIMINAL_ID	OFFENCE_ID
10101	15/OCT/17	102	A1001	crim101	33311
10111	18/OCT/17	103	A1002	crim107	33313
10121	20/OCT/17	105	A1005	crim108	33311
10131	22/OCT/17	101	A1003	crim103	33315

Question 1 **(Marks: 6)**

Create a SQL query to display the officer who arrested a criminal for an offence during the period between 20 October 2017 and the 30 October 2017.

Sample Results:

OFFICER	CRIMINAL	OFFENCE_NAME	CASE_DATE
Simon, Jones	Thomas, Abrahams	House Robbery	20/OCT/17
Cameron, Willis	Bruce, McKenzie	Tax Fraud	22/OCT/17

Mark Allocation:

Requirement	Mark	Examiner
Correct select statement used.	2	
Correct Tables used	2	
Correct output	2	
TOTAL	6	

Question 2 (Marks: 8)

Create a PL/ SQL query to display the criminal name and the offence committed for a 20 year sentence.

Sample Results:

anonymous block completed
CRIMINAL: Bruce, McKenzie
OFFENCE: Tax Fraud
SENTENCE: 20 years

Mark Allocation

Requirement	**Mark**	**Examiner**
Variables declared correctly.	2	
Correct select statement used.	2	
Correct Tables used	2	
Correct output	2	
TOTAL	8	

Question 3 (Marks: 12)

Create a PL/ SQL query to display the criminal, the offence committed and the offence rating. In your query include an offence outcome which is either a light offence or a serious offence. A light offence is any offence rating that is less than or equal to 5, whereas a serious offence is an offence rating greater than 5.

Sample Results:

anonymous block completed
CRIMINAL: Sam, Jackson
OFFENCE: House Robbery
RATING: 2
OUTCOME: Light offence

CRIMINAL: Bruce, McKenzie
OFFENCE: Tax Fraud

RATING: 7
OUTCOME: Serious offence

CRIMINAL: Fabian, Willemse
OFFENCE: Drug Possession
RATING: 8
OUTCOME: Serious offence

CRIMINAL: Thomas, Abrahams
OFFENCE: House Robbery
RATING: 2
OUTCOME: Light offence

Mark Allocation

Requirement	**Mark**	**Examiner**
Correct variables created	3	
Correct select statement used	3	
Correct use of cursor	2	
Correct use of loop	2	
Correct output	2	
Total	12	

Question 4 **(Marks: 10)**

Create a view called Address_View that will display the officer ID, citizen ID, citizen address, criminal ID, offence committed and the case date. In your solution only display the offences committed in Main Road and supply the code to run the view.

Sample Results:

OFFICER_ID	**CITIZEN_ID**	**CITIZEN_ADDRESS**	**CRIMINAL_ID**	**OFFENCE_NAME**	**CASE_DATE**
105	A1005	12 Main RD	crim108	House Robbery	20/OCT/17

Mark Allocation:

Requirement	**Mark**	**Examiner**
Create or replace view used	2	
Correct select statement used	2	
Correct tables used	2	

Correct code to run the view	2	
Correct output	2	
Total	10	

Question 5 (Marks: 10)

Create a trigger called Offence_Entry that will not allow an offence rating to be entered into the offence table that is less than zero or greater than 10. In your query include the code to test the trigger.

Mark Allocation:

Requirement	**Mark**	**Examiner**
Create or replace trigger used	2	
Correct use of after insert or update used	2	
Correct variables created	2	
Correct selection statement used	1	
Correct code to display restriction message	1	
Correct code to test the trigger	2	
Total	10	

Question 6 (Marks: 12)

Create a procedure called Criminal_Details that will accept a criminal ID as an input parameter and will display the criminal name and the offence committed on a certain day. In your solution display the data for any criminal and provide the code to execute the procedure with an exception handling if no criminal data is found.

Sample Results:

CRIMINAL DETAILS: Sam Jackson committed a House Robbery on the 15/OCT/17.

Mark Allocation:

Requirement	**Mark**	**Examiner**
Create or replace procedure used	2	
Correct variables created	2	
Correct select statement used	3	
Correct code to run procedure	3	
Correct output	2	
Total	12	

Question 7 (Marks: 12)

Create a function called Case_Adjustments that will accept a criminal ID as an input parameter and add five (5) days to the criminal's case date. In your query use any criminal ID as the input parameter and display the criminal name, offence committed and the new case date.

Sample Results:

Sam, Jackson committed the offence House Robbery and has a new case date which is 20/OCT/17.

Mark Allocation

Requirement	**Mark**	**Examiner**
Create or replace function used	2	
Correct variables created	2	
Correct select statement used	2	
Correct code to run function	2	
Correct use of exception handling	2	
Correct output	2	
Total	12	

END OF PAPER