



12 Pages

1. Please give the information requested in the boxes below.

2. Enter your name in the space provided to the right, fold over, and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either and the expense of typing charged to the candidate.

4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
8. Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.

7	Number of Answer Books handed in	
6	Seat Number	14
5	Examination Venue	PERMBROKESHIRE COLLEGE
4	Date and Time of Examination	9 MAY 2019
3	Module Code	ACCA5014
2	Title of Examination Paper	DATABASE MANAGEMENT SYSTEMS
1	Student Number	

[illegible]

Complete, fold and seal
(see note 2 below)

SURNAME: LEWIS

FORENAME(S): LEONIE ROSE

1. CREATE TABLE TutorBooking (

BookingRef INT NOT NULL,
BookingDate DATE NOT NULL,
TutorNO INT NOT NULL,
StudentNO INT NOT NULL,
SubjectID INT NOT NULL,
~~SubjectLevel INT NOT NULL CHECK (SubjectLevel > 0)~~

SubjectLevel INT NOT NULL CHECK (CONSTRAINT

(SubjectLevel > 0)
HourlyRate DECIMAL (3,2),

ALTER TutorBooking,

INSERT PRIMARY KEY [PK - BookingRef]
REFERENCES TutorBooking (BookingRef);

ALTER TutorBooking,

INSERT FOREIGN KEY [FK - TutorNO]
REFERENCES TutorSubject (TutorNO);

ALTER TutorBooking,

INSERT FOREIGN KEY [FK - StudentWO]
REFERENCES Student (StudentWO);

ALTER TutorBooking

INSERT FOREIGN KEY [FK - SubjectID]
REFERENCES TutorSubject (SubjectID);

iv

CREATE TABLE TutorSubject (

TutorNO INT NOT NULL,
~~Subject SubjectID INT NOT NULL,~~

KSLevel INT NOT NULL,

ALevel INT NOT NULL,

HELevel INT NOT NULL,

MINHourlyRate DECIMAL (3,2) NOT NULL CHECK
(CONSTRAINT (MINHourlyRate > 0)),

MAXHourlyRate DECIMAL (3,2) NOT NULL,
PRIMARY KEY (TutorNO)

7

0

7

SELECT TutorNO, ~~name~~, FirstName, Surname,
Email, phoneNO, DBSExpiryDate
FROM Tutor

(IF) DBSExpiryDate BETWEEN 01/06/2019
AND 30/06/2019 ✓

SORT BY DBSExpiryDate DESC! ✓

SELECT DBSExpiryDate, status
FROM Tutor

IF DBSExpiryDate < ~~Tutor~~ DATE NOW
ALTER status "pending"!

B!!

3

Cyber attacks - overload of information targeted
at the database in order for users to gain
access to data held for malicious purposes.
Backing up database - if databases aren't backed-up
regularly information recently updated can be lost.

~~The purpose of an index within a database~~

~~is like an index within a book. The index~~

~~speeds up searching to allow data to~~

~~be found at a quicker rate~~

3

- unauthorised access - users can access
the database read, manipulate or delete
data. This would pose a threat to the database
as said un-authorised individual could
remove or alter data within the database

B!

Authentication: Authentication can be implemented
by the database administrator in order to ensure
users accessing the database are who they
say they are. This prevents un-authorised
access.

1

Examiner Only

can be implemented ~~to prevent users~~

to prevent users from accessing areas of

have access too. user privileges can

they are allowed to do with the

The data available or having the provided

of the above views can be used

you are aware that you are only

$$h+1 \text{ BZ} + 1 \text{ BZ} + 1 \text{ BZ} = 10 \text{ BZ}$$

the following are the main types of

Wavelength is directly proportional to frequency

28266

SELECT Title, FirstName, Surname, Email, City, State

WHERE status = "Active" ✓

CREATE VIEW ActiveTutors

$$m+b+s \quad | \quad h+$$

-ROM Tutor

INNER JOIN + TutorSubject, + subject ID,
+ KSLevel, + ALever, + HLevel, + minHourlyRate,
+ maxHourlyRate
FROM TutorSubject!

4

C

lost updates - Any changes made to the database
were lost ~~the~~ during updation. Loss of data ✓
can occur.
uncommitted dependency -

2 ✓

Data dependent on other data not functioning
as it should due to the data being
uncommitted.

inconsistent analysis -

Analysis is inconsistent and therefore has
an effect on the outcome.

D

T₄ needs to be redone because it occurred after the crash.
T₃ needs to be undone because it occurred during the
crash so we do not know if it was fully completed and
unaffected by the crash.

~~1~~

!!!

Both T₂ and T₂ are not affected by the
crash as they were carried out before it occurred.

2 ✓

C

Time	T ₁	T ₂	T ₂
	READ BAIx	READ BAIx	BAIx (£500)
T ₂	READ BAIx	READ BAIx	500 ✓
T ₃	Read BAIx	BAIx = BAIx10	~~500~~ 500 ✓
T ₄	BAIx = BAIx5	Write BAIx	600 ✓
T ₅	.	COMMIT	600 ✓
T ₆	Write BAIx		550 x
T ₇	COMMIT		550 x

This can be prevented by executing transactions individually rather than concurrently.

concurrency control ensures that database transactions run smoothly and can occur together without issues arising.

Anything that may allow a user to access, manipulate or remove data from the database without permission to do so is a risk.

User Authentication - if this is not implemented by the database administrator the database will be at risk of everybody being able to access all information held on the data base. This is a major threat to an organisations database as new or un-trusted employees could have access to information they do not need to know.

Access - if users have access to all

Information held on the database they can view, alter or remove information that could be important to the organisation. They could also copy this data and provide it to a competitive organisation or just make it public.

Cyber attacks are also dangerous especially if your database holds sensitive information. Individuals could gain access to this information and use it for their own personal gain or malicious reasons.

Backing up your database is important to prevent the risk of losing data. Back-ups should be implemented on a scheduled basis in order to reduce the impact if the database was to be lost.