



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 ignore the script or have it typed 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.**

1	Student Number	1701604
2	Title of Examination Paper	Database Management Systems
3	Module Code	ACCAS014
4	Date and Time of Examination	9/5/19
5	Examination Venue	Swansea
6	Seat Number	6018
7	Number of Answer Books handed in	

[illegible]

1

(a) (i) CREATE TABLE TutorBooking:
BookingRef INT ID (1,1),
BookingDate DATE,
TutorNo DECIMAL, INT ID (1,1),
StudentNo INT ID (1,1),
SubjectId CHAR (50),
SubjectLevel VARCHAR (150),
HourlyRate DECIMAL.

no check constraint
column types
6.5

(ii)

ALTER TABLE TutorBooking
Pk_BookingRef - TutorBooking CHECK BookedLesson REFERENCE BookedLesson

0.5
incorrect syntax
1/2

(iii)

ALTER TABLE TutorBooking:
FK_BookingRef - TutorBooking CHECK REFERENCE BookedLesson
FK_TutorNo - Tutor TutorBooking CHECK REFERENCE Tutor
FK_StudentNo - Student TutorBooking CHECK REFERENCE Student
FK_SubjectId - Subject TutorBooking CHECK REFERENCE Subject
);

1
incorrect syntax but
identifies FK tables but
not the columns.

(iv)

CREATE TABLE TutorSubject:
TutorNo INT ID (1,1) Pk_TutorNo-TutorSubject CHECK CONSTRAINT TutorNo
SubjectId CHAR (50) FK-SubjectId-Subject CHECK CONSTRAINT Subject
KSLevel VARCHAR (100),
ALevel VARCHAR (100),
HELevel VARCHAR (100),
MinHourlyRate DECIMAL,
MaxHourlyRate DECIMAL.

incorrect PK, FK,
primary and check constraint.
6.25

1 (b) (i)

SELECT DBS ^{ExpiryDate}~~Certificate~~
 FROM Tutor, Student
 WHERE $\geq$ June 2019
 ORDER BY TutorNo, Name, ContactDetails desc.

(1)

(ii)

SELECT DBS ^{ExpiryDate}
 FROM Tutor
 WHERE $\geq$ June 2019
 THEN? "Pending DBS Check"

0.25

(iii)

SELECT MinHourlyRate, MaxHourlyRate, AvgHourlyRate
 FROM TutorSubject, TutorBooking
 WHERE min = MinHourlyRate AND max = MaxHourlyRate AND avg = HourlyRate
 ORDER BY MinHourlyRate, MaxHourlyRate, HourlyRate desc

0.25

Q1 - 15.75
 15.3/4
 15

2 (a)

~~External is the data outside the database this could be the data being inputted for example inserting values into a database~~
~~Internal is the data inside the database this could be the data being retrieved for example selecting values from a database~~

~~Internal is the data inside the database this could be the data being retrieved for example selecting values from a database~~

b (i) The purpose of an index is to speed up the retrieval of records (2)

b (v) INSERT INTO TutorBooking (BookingRef, StudentNo, SubjectId, TutorNo)
VALUES (500, 25, 100, 66);

missy date value

~~INSERT INTO Student (First Name, Surname) VALUES ('Martin', 'Thomas');~~
~~INSERT INTO TutorBooking (BookingRef, StudentNo, SubjectId, TutorNo) VALUES (500, 25, 100, 66);~~
~~INSERT INTO Subject (SubjectId, Subject) VALUES (100, 'Programming');~~
~~INSERT INTO Tutor (TutorNo, First Name, Surname) VALUES (66, 'John', 'Davies');~~

4

INSERT INTO Student (StudentNo, First Name, Surname) VALUES (25, 'Martin', 'Thomas');
INSERT INTO TutorBooking (BookingRef) VALUES (500);
INSERT INTO Subject (SubjectId, Subject) VALUES (100, 'Programming');
INSERT INTO Tutor (TutorNo, First Name, Surname) VALUES (66, 'John', 'Davies');

not needed

~~INSERT INTO TutorBooking (BookingRef, StudentNo, SubjectId, TutorNo) VALUES (500, 25, 100, 66);~~
INSERT INTO BookedLesson (BookingRef, LessonDateTime, DurationMins)
VALUES (500, 30-May-2019 AND 31-May-2019, 120);

missy 1 booked lesson
calibration

2 (a) External is the data that is outside the database such as the inputting of values.

Internal is the methods used to structure the database
Conceptual Schemas is the ready made sections in order to view the database

not quite
0.25

b(ii) It is important as if done incorrectly then the indexes will fail, and different type of indexes will favour different methods of transactions and thus being essential to analyse before implementing.

1

b(iii)

Secondary or Non Clustering ~~not clustering~~
~~Secondary~~ indexing may be more beneficial as there are no foreign keys
 only a single primary key.

X

X

(iv)

As the TutorID is accessed regularly that is also the primary key this means another
 The DBSExpiryDate will be needed in order for Students to pay the
 tutor and book their services. It would be important to include a
 Secondary index form on this column. Another column which could have
 its inclusion is the Status as the is when booking it would be beneficial
 to know the status of the tutor if they are able however it would be
 impossible to book without the Payment details.

(1)

Q2- 8.25
 8 1/4

3 (a) 2 Major threat is the possibility of unauthorized access and that could cause them to Change and manipulate the database negatively. Hacking will result in the database being compromised which could result in facts and figure within the business changing in faults. Faults within the database that occurred will cause a massive threat as the database will seem correct and it would be displaying the wrong information. Other forms of manipulation that can occur will breach the security and cause damage by manipulating the database.

(6)

- 3 (b) (i) Authentication means to set up a method of protection when accessing the database. Username or password for example, if a person attempting to log on hasn't got the correct credentials then they won't be able to access.
- (ii) The admin may wish for others to access the database however not perform any actions on the database. The admin will enforce control rights and privileges to ensure that nobody is able to change anything on the database.
- (iii) The views can be changed so that the admin is able to view the all areas of the database whereas setting different views for others so they can only see certain bits sections.

(6)

3 (c) ~~SELECT~~
VIEW Tutor

(i) SELECT Name, Email, PostCode
FROM Tutor
VIEW WHERE ~~Active~~ Status = 'Active'

(1.5)

(ii) SELECT SubjectId, KLevel, ALLevel, HELevel, MinHoursPerWeek, MaxHoursPerWeek
FROM TutorSubject
VIEW WHERE "Active" Status = 'Active'
ORDER BY

Q3-13.5

(13 1/2)

Q. (a) ACID stands for Atomicity, Consistency, Isolation, Durability

Atomicity means to

(b) Consistency is the way the database performs in being consistent throughout
Isolation is the authorization and identification of the database
Durability is how well it performs

(c) Concurrency Control allows for the constant and consistent check of the database to keep it reliable and continues to perform activities to keep it consistent.

(d) AC