

SECTION B : 70 MARKS
BAHAGIAN B : 70 MARKAH

INSTRUCTION:

This section consists of **THREE(3)** short answer question. Answer all question.

ARAHAN :

Bahagian ini mengandungi TIGA (3) soalan jawapan pendek. Jawab semua soalan

QUESTION 1

SOALAN 1

- | | | |
|------------|---|---|
| CLO1
C1 | <p>a) List THREE (3) properties of databases.
 <i>Senaraikan TIGA (3) ciri-ciri pangkalan data.</i></p> | <p>[3 marks]
 [3 markah]</p> |
| CLO1
C2 | <p>b) Explain TWO (2) advantage using database server.
 <i>Terangkan DUA (2) kebaikan menggunakan pelayan pangkalan data.</i></p> | <p>[4 marks]
 [4 markah]</p> |
| CLO1
C1 | <p>c) Define terms below.
 <i>Tentukan istilah dibawah.</i></p> <p style="margin-left: 40px;">i. Degree / <i>Degree</i></p> <p style="margin-left: 40px;">ii. Cardinality / <i>Kardinaliti</i></p> <p style="margin-left: 40px;">iii. Primary key / <i>Kunci utama</i></p> <p style="margin-left: 40px;">iv. Foreign key / <i>Kunci asing</i></p> <p style="margin-left: 40px;">v. Attribute / <i>Atribut</i></p> | <p>[1 mark]
 [1 markah]</p> <p>[1 mark]
 [1 markah]</p> <p>[1 mark]
 [1 markah]</p> <p>[1 marks]
 [1 markah]</p> <p>[1 marks]
 [1 markah]</p> |

Question d and e, based on Table B2 and Table B3.

Soalan d dan e, berdasarkan Jadual B2 dan Jadual B3.

Table B2 : Lecturer / *Jadual B2 : Lecturer*

staffID	Name	Address
J109	Kamaliah Haron	Pahang
J210	Azfar Haris	Pahang
J003	Nurul Imani	Perak

Table B3 : Subject *Jadual B3 : Subject*

Subject code	Subject name
DFC20203	Database
DFC20011	Web Design

CLO1
C2

- d) Generate the output by using Cartesian Product for the Lecture and Subject table.

Jana paparan bagi operator Produk Cartesian untuk Jadual Lecturer dan Subject.

[4 marks]

[4 markah]

CLO1
C2

- e) Write the relational algebra operator to display Staff ID and Name of lecturer who come from Pahang.

Tulis ungkapan hubungan operator algebra untuk paparkan StaffID dan Name pensyarah dari Pahang.

[4 marks]

[4 markah]

QUESTION 2**SOALAN 2**CLO1
C1

- a) Define the normalization in database.

Definisikan normalisasi dalam pangkalan data.

[2 marks]

[2 markah]

CLO1
C1

- b) List
- THREE (3)**
- types of anomalies in normalization.

*Senaraikan **TIGA (3)** jenis anomali dalam penormalan.*

[3 marks]

[3 markah]

CLO1
C1

- c) Name
- FIVE (5)**
- types of attributes in entity relationship diagram.

*Namakan **LIMA (5)** jenis atribut dalam rajah hubungan entiti.*

[5 marks]

[5 markah]

CLO1
C1

- d) List
- TWO(2)**
- types of attribute with the correct symbol.

*Senaraikan **DUA(2)** jenis attribute dengan simbol yang betul*

[4 marks]

[4 markah]

CLO1
C2

- e) Based on Figure B1, change the relation scheme to Chen's model.

*Berdasarkan Rajah B1, Tukarkan skema hubungan di bawah kepada model**Chen.*Book (BookID , BookName, Year, Publisher);Author (AuthorID, AuthorName, BookID);

Figure B1 /Rajah B1

[5 marks]

[5 markah]

CLO1
C3

- f) Draw the complete ERD including the keys and the relationship cardinality by using Chen's notation based on Figure B2.

Lukis ERD lengkap termasuk kekunci dan kardinaliti hubungan menggunakan notasi Chen berdasarkan Rajah B2.

A company has a number of employees. The information of employee includes Emp_ID and Emp_Name. The company also has several projects. Attributes of project include Proj_ID and Proj_Name. Each employee may be assigned to one or more projects. A project must have at least one employee assigned to it, and may have any number of employees assigned to it.

Sebuah syarikat mempunyai beberapa orang pekerja. Atribut 'Employee' termasuk Emp_ID dan Emp_Name. Syarikat itu juga mempunyai beberapa projek. Atribut 'Project' termasuk Proj_ID dan Proj_Name. Setiap pekerja diberikan kepada satu atau lebih projek. Projek mesti mempunyai sejurang-kurangnya seorang pekerja yang diberikan kepadanya, dan mungkin beberapa orang pekerja yang diberikan kepadanya.

Figure B2 /Rajah B2

[6 marks]

[6 markah]

QUESTION 3
SOALAN 3

CLO1
C1

- a) Identify **FOUR(4)** function used in DDL commands.

Kenalpasti EMPAT(4) fungsi yang digunakan dalam arahan DDL.

[4 marks]

[4 markah]

CLO1
C1

- b) Describe and give **ONE(1)** example using the function ALTER in SQL command.

Jelaskan dan berikan SATU (1) contoh menggunakan fungsi ALTER di dalam arahan SQL.

[3 marks]

[3 markah]

CLO1
C2

- c) Based on Table B5, write the SQL command to display all information from Employee table with position is Manager and Salary greater than 7000.

Berdasarkan Jadual B5, tuliskan arahan SQL untuk paparkan semua maklumat dari jadual Employee yang berjawatan pengurus dan gaji lebih dari 7000.

Table B5: Employee / Jadual B5: Employee

Emp_id	Name	Position	Salary
E001	ALIF	Accountant	6700
E002	JULIA	Manager	8000
E003	SURIA	Manager	7500

[5 marks]

[5 markah]

CLO1
C3

d) Based on the Figure B3, answer question i and ii.

Student (StudID, StudName, StudAddress, CourseID)

Course (CourseID, CourseName, DeptID)

Department (DeptID, DeptName).

Figure B3 / *Rajah B3*

i) Write a query that will retrieve the value of CourseID from the Student which enroll the course without any repeats.

Tulis pernyataan yang mendapatkan nilai bagi CourseID daripada jadual Pelajar yang mendaftar kursus tanpa ada pengulangan.

[3 marks]

[3 markah]

ii) Write SQL statement to list all the students from Pahang.

Tulis pernyataan SQL yang akan menyenaraikan semua pelajar dari Pahang.

[2 marks]

[2 markah]

CLO1
C2

e) Differentiate between COMMIT and ROLLBACK in database transaction.

Bezakan antara COMMIT dan ROLLBACK dalam transaksi pangkalan data.

[2 marks]

[2 markah]

CLO1
C2

f) Explain the function of two phase locking.

Terangkan fungsi dua fasa berkunci.

[3 marks]

[3 markah]

CLO1
C3

- g) Based on Figure B4, analyze the problems of concurrency that occurred and give one suggestion to prevent this problem.

Berdasarkan Rajah B4, analisa masalah keserentakan yang terjadi dan berikan satu cadangan untuk elakkan masalah ini berlaku.

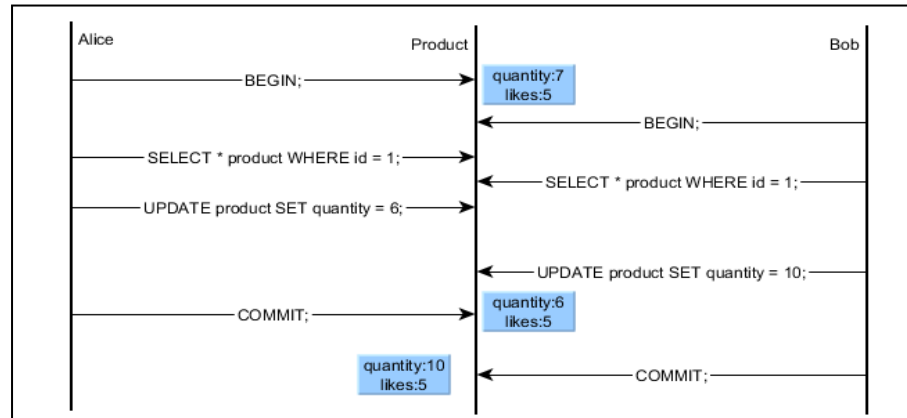


Figure B4 / Rajah B4

[3 marks]
[3 markah]

END OF QUESTIONS

SOALAN TAMAT